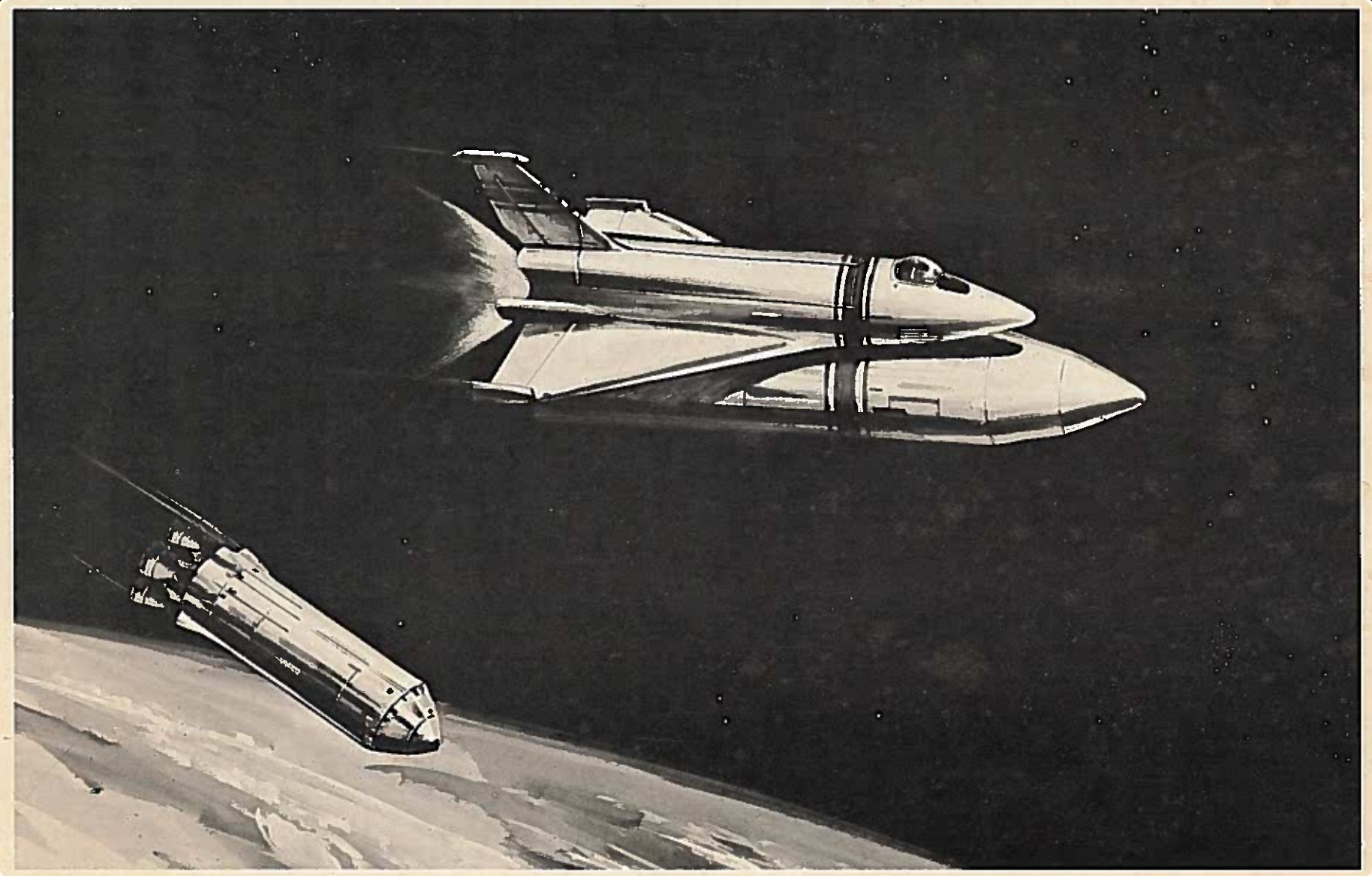
GRUMMAN plane news

Vol. 31, No. 1, Bethpage, N. Y., January 14, 1972



Evans: 'We can win Orbiter . . . and we're going out to do it'

For about 500 members of the Space Shuttle team who had gathered at Plant 25 last Friday to meet with Lew Evans, the message that the Grumman Aerospace Board Chairman brought them was clear and direct: **"We can win the orbiter competition, and we're going out to do it."**

And, it seemed, so that there would be no doubt about the total Grumman commitment, he brought an imposing array of Corporate talent to help spread the gospel. Accompanying Evans were President Bill Zarkowsky, Senior Vice Presidents Dick Hutton, Grant Hedrick, and Corky Meyer, Vice Presidents Larry Mead, Tom Kelly, Alex Alexandrovich, Tom Rozzi, and Ralph Tripp, and Jack McNamara and Augie Walsky, assistants to the Board Chairman.

The day before, Thursday, January 6, President Richard Nixon had turned on the aerospace industry for the Space Shuttle competition by instructing James Fletcher, administrator for the National Aeronautics and Space Administration, to "proceed at once" with a $5.5 billion development program.

Although Grumman, like other major aerospace companies, had been working on the Shuttle design for more than two years, this was the first clear indication that the Government was lending its full support to the program.

Sees space savings

As President Nixon stated, the Shuttle would take "the astronomical costs out of astronautics," by cutting the expense of putting payloads into space from about $700 to $100 a pound.

Basically, the Space Shuttle will provide the United States with a space system that would be launched like a rocket by an unmanned booster. After separating from the booster, a winged spacecraft would then be able to orbit the earth, carrying scientific personnel and payloads to visit space stations, launch unmanned satellites, or even make repairs on communications and weather satellites. When their mission was completed, they could return to earth in the orbiting craft, much as a plane returns to an airport, to be used again for other space missions.

Grumman and Boeing are teamed with a number of other associate contractors in the Space Shuttle competition, with Grumman aimed directly at the orbiter design, and Boeing at the booster phase of the program.

"About a year ago we were out of it," Evans told the men and women crowded around him on the third floor of Plant 25, home of the space team. "Now we're back in it—and it was your design that put us back in the orbiter competition. The (orbiter) design now being considered by NASA is essentially your design, the Grumman approach. We said that we could build the Shuttle system for $5.5 billion.

Tough road ahead

But, while complimenting his audience for their earlier accomplishments, Evans left no doubt that the road ahead would be a little steeper and a little rockier: "During the next couple of months it's going to be pretty rugged, and there are going to be pretty long hours. We must have a lean, tight, tough team. Any mistakes we've made before, **we won't make again.**"

If there were any doubt about his own personal commitment to winning the Shuttle competition, he dispelled it: "We're going to be living in Plant 25 with you about 50-75 percent of the entire time between now and June—and

(Continued on page 3)

Final report: money, presents help brighten kids' holidays

Reverberations from the holiday season's activities are still being heard. Under Jim Barcus' enthusiastic effort at Goddard Space Flight Center, the Grumman staff collected $500 in lieu of sending greetings cards to each other. They donated it to Children's Hospital, National Medical Center, in Washington, D. C.

From Larry Conboy of Product Manufacturing Plans & Proposals comes this account of a similar effort in Bethpage:

'Twas like two weeks before Christmas, when all through Product Manufacturing came a really quick response to some foresighted Advance Planning by six slick secretaries. Their modest proposal was basically a hard-nosed request for funding: "Instead of sending Christmas and Hanukkah cards to Grumman associates whom you see at work every day . . . why not donate what you'd spend on cards and postage to a fund to buy toys for some children who are less fortunate than ours?"

The project was happily honchoed by Carol-Lee Gosline, Susan Clune, Helen Zajicek, Virginia Miranti, Dotty Rhodes, and Helen Bergholtz. The gals even promised to shop for the toys, the wrappings and stocking-stuffers, and deliver the gifts personally to the kids. The response to their message was lively and quick; in a week they had gathered wherewithal for St. Nick. Final assembly and checkout of all items was accomplished out-of-house at a peaceful domicile in the appropriately-named village of Amityville, where all the gifts were inspected for quality, securely wrapped, and sealed with tender loving care (TLC). The units were subsequently shipped over-the-road via Mustang and Vega to bring some added joy to a North Shore school for retarded children.

Small fry. Kids from St. Mary of Angels Home in Syosset were on hand to greet Jerry Mason, Catherine Smith, Mike Broszcak, Linda Kost, and Tony Friscia, representing the Warehouses, when they presented Sister Olivia with returns from Christmas collection. (Photo by Bill Governale)

Government offers tips to consumers

Worried about your weight? Your family budget? Your fuel bills? Trying to make up your mind about studded snow tires? Shopping for safe toys for the children?

Before you buy, take a look at what the Federal Government's consumer booklets have to say on these subjects.

The latest edition of these booklets was issued recently by the Consumer Product Information Coordinating Center in the General Services Administration. It lists 192 titles, including: How to Buy a Christmas Tree, Safe Toys for Your Child, Calories and Your Weight, Family Food Budgeting, Seven Ways to Reduce Fuel Consumption in Household Heating through Energy Conservation, and Studded Tires—What Every Motorist Should Know.

The majority of the booklets listed cost 20 cents or less; many are free. All the booklets and the free Index are available through:

Consumer Product Information
Washington, D. C. 20407

Over six million copies of the latest Index are being distributed to consumers throughout the nation. Two-thirds are being mailed out from Congressional offices. The remainder will be distributed through other Government facilities, through private organizations, and in response to mail or telephone requests received by the Center.

This massive distribution will be repeated when revised editions of the Index are issued. By June 1972, it is estimated that approximately 15 million indexes wil have been distributed to consumers.

Lunchtime serenade. Grumman Employees Band visited plants during holiday season to entertain at lunchbreak. Al Kordula and his troupe are serenading Plant 6 troops in this photo by Gerry Costello.

Around and about . . .

Nice words about the **Grumman Ex-Service Men's Club** and the **Grumman Employees Band** flowed in to President Bill Zarkowsky from the American National Red Cross at St. Albans Naval Hospital and the Northport Veterans Hospital following their holiday visits to entertain hospitalized vets. In noting their contributions to the veterans at Christmas, Bill Zarkowsky said: "I would like to extend my personal thanks to all those who participated. It gave me a warm feeling and it makes me feel proud to have your gang working for the Grumman team."

Some of the best advertising, and the most effective, they say, is by word of mouth. And it doesn't cost anything. Sam Parkinson of Business Development forwarded to us a letter he received from a West Coast friend that noted "on a recent flight out of San José, the pilot (PSA Airlines, a very efficent, very successful, very informal airline) banked very sharply and pointed to a **Gulfstream II** at the end of the runway. He said that's what he wanted for Christmas, 'the best executive plane in the world.' Most of the passengers worked for Lockheed, Douglas, or North American."

Keep those letters comin', folks.

There's a message there

If you're a heavy smoker and have been looking around for a reason to kick the habit, look up **Walt Monsen** of Product Support - Program Management in Plant 5. He has a reminder on his desk that may help you join the un-hooked generation—a black box that houses more than cigarettes. As the box slowly opens to the accompaniment of a funeral dirge, a skull appears with a cigarette in its mouth, and a hacking cough is heard. Heavy humor, you say? Maybe, but the message is clear. . . . Had a note from **Eileen Johnsen**, formerly of GDS Key Punch in Plant 30. Eileen suffered a sudden illness about 18 months ago and has been out ever since, but her former coworkers haven't forgotten her. Eileen wants all of her friends at Grumman to know that she will "never forget all of your generosity and thoughtfulness. . . . " **Al Weidig** of Planning and Control, Plant 7, installed recently as Grand Knight of the St. Thomas More Council, Knights of Columbus, in Smithtown. . . . **Bob Settles** of Presentations Services won a first and honorable mention in photography at a recent student art show at Nassau Community College.

Social Security note

The Federal Government won't be taking any more money out of your pay check for **Social Security in 1972**—no more, just a little longer. The maximum amount of earnings from employment that count for Social Security purposes will increase from $7,800 in 1971 to $9,000 in '72. The contribution rate schedule for employees and employers will remain at 5.2 percent. Because of the raise in the wage base, the maximum contribution payable by employees under F.I.C.A. will increase from $405.60 (1971) to $468 ('72).

Tuition reimbursement alert

Employees who wish to receive assistance under the **Grumman Tuition Reimbursement Program** this spring are reminded that the deadline for applying is approaching. Applications must be submitted to the Tuition Reimbursement Program Office, Plant 39, within 15 days of the last normal registration date at the student's school.

The new applications and descriptive folders can be obtained from any Employee Services Office or representative.

'We're going to be driving for the next couple of months'

(Continued from page 1)

we're not coming over here except to win."

And the message was much the same from others:

Zarkowsky—"There must be a total will to win. We had to do the same with the F-14, and we accomplished it. Now we must do the same with the orbiter."

Hedrick—"I want to get back over here and spend more time with you, and that's what I expect to do for the next couple of months."

Meyer—"Lew Evans never denied anybody the cooperation and the resources to work 24 hours a day to win—and that's the only way to win."

Alexandrovich — "Let's be thorough and professional."

Mead—"We've got the winning combination. We have a lot to do in the next few weeks. We must tell our story thoroughly and convincingly. We've done an awful lot of work—and we've got to show it in the proposal."

Kelly—"Our job (Shuttle team leaders) is to be perpetually dissatisfied. We have done a fine job. But you, me, and everybody else has to do a better one. For the next couple of months, 'Show me' is going to be the theme song around here."

Tripp—"To be a successful winner, we must also remember our commitment on LM. The Lunar Module was one of the most difficult jobs ever planned, and we accomplished it. It has been fantastic. We can do the same on the Shuttle."

Perhaps Fred Raymes, who is assistant program director on the Shuttle, put it most succinctly. When asked by Evans for his thoughts on the meeting, Raymes noted that he was "a refugee from the West Coast" and that "a lot of people think the Christmas turkey we get at Grumman is cornball. I think it's great. And I'd like to get one next year, too." The applause was instant.

Cost key factor

In the NASA directive to prospective Shuttle contractors, the space agency said that "the shuttle orbiter is expected to have a 15 x 60 foot payload bay, and a 65,000 pound payload capability. It will be boosted either by a pressure fed liquid recoverable booster or by solid rocket motors. NASA will make a decision between these two booster options before requests for proposals are issued in the spring of 1972.

"NASA and industry will also continue to study, for the next several weeks, a somewhat smaller version of the orbiter, with a 14 x 45 foot, 45,000 pound payload capability, with the pressure fed liquid and solid rocket motor booster options. The main purpose of studying this smaller shuttle is to determine whether or not significant savings in operational costs can be realized with solid rocket motors at this smaller size. . . ."

The target dates for the Space Shuttle call for:

- Final study review at NASA headquarters—February 22
- Final booster, payload compartment size, and payload weight selection—March 1
- Release of the Request for Proposal for the Space Shuttle System—March 15

Summing up, Evans noted that the Manned Spacecraft Center will be the directing center on the Shuttle, and that the Grumman team must convince NASA of these key points:

- Grumman is best qualified to execute their design.
- Grumman has best people to do the job
- Grumman understands what NASA wants and means on the Space Shuttle proposal
- No contractor is better qualified than Grumman in systems engineering
- Grumman has good working relationship with associate contractors

Closing out the meeting, Evans advised the Shuttle team to concentrate on two things only: submitting the top design and the top proposal.

"We're going to be driving around here for the next couple of months," he said. "There's liable to be some irritation, some chafed feelings. But it will be well worth it to win the orbiter."

About the cover

Cover rendering by Bud Parke of Presentations Services provides a view of the latest NASA configuration of the Space Shuttle. In this look at the future, the first-stage booster rocket has already fallen away and begins its descent to earth where it will be recovered for another mission. The orbiter continues into earth orbit riding atop its hydrogen-oxygen tank. The orbiter, which carries additional fuel onboard for in-flight and landing maneuvers, jettisons its H-O tank before making descent to earth.

Armed Forces Journal terms Tomcat as 'vastly superior'

Does the Navy need an air superiority, Fleet air defense aircraft?

If so, is the F-14 (Tomcat) likely to be able to fill the need?

Is the F-14 program within reasonable cost levels?

When you get right down to it, these are the crucial questions. And in a recent issue of the prestigious Armed Forces Journal, founded in 1863, managing editor Brooke Nihart answers them in some depth, beginning with the charge that a "cheap lightweight fighter" is all that's really required. Says Nihart:

"The agreed-upon threat to naval forces and to U.S. forces in any theater requires an aircraft-weapon system capable of meeting and defeating the existing Soviet sophisticated, missile-equipped fighters under electronic control, anti-ship missiles, mobile surface-to-air missiles, and bombers firing long-range air-to-surface missiles. The threat dictated the choice of an aircraft-weapon system that is both an air-to-air missile carrier and a dogfighter. All analyses to date show that the F-14A is clearly superior in these roles to the known and projected Soviet threat in the 1960-80 period.

"Moreover, according to intelligence sources, the Soviet 'missile-load trend' is up. This means the proportion of Soviet heavy missile-armed fighters is growing, compared to their lightweight agile fighters."

As Brooke Nihart observes, the two missions—Fleet air defense and dogfighter—"add up to a big plane—and an expensive one. Since each carrier will have only 24 fighters aboard, they should be the best possible to do the job. . . ."

That an augmented group of lightweight fighters could do the job was discounted by an official of the Office of the Director of Defense Research and Engineering:

"Maybe you could operate 36 lightweight fighters from a carrier but you still would have an inferior force. The fighter would be lightweight because it carried little fuel, a smaller radar, fewer shorter range missiles, and only one man to operate the system. Therefore, both plane and weapons have a shorter range, and the carrier would have to get closer to the target. Its attack aircraft couldn't have a fighter escort to their maximum range."

Since Tomcat is a multi-mission aircraft and weighs about as much fully loaded as an F-4, it carries more punch-per-pound than the F-4. In addition, the F-14's capability can be broadened easily (say, to serve as a reconnaisance-strike aircraft) simply by hanging pods on it. "Such a pod," says Nihart, "would contain sensors and target designators, and 'smart' guided bombs and stand-off missiles. . . ." And none of this would require alteration of the F-14's structure.

Turning on. When the new Electron Beam tunnel welder at Plant 2 was ready for its first test weld recently, President Bill Zarkowsky (L) was on hand to 'turn on' the big welder. With Zarkowsky at the E-B operator console are (L to R) Vice President Tom Rozzi, Bill Wolfe of Industrial Controls Engineering, one of the Grumman groups that helped prepare the welder for F-14 work, and Jack McNamara, who heads Maintenance. (Photo by Larry Van Wallendael)

It all sounds good . . . **but** how about Tomcat's performance? How does it stack up against the F-4, or an F-4J that is equipped with slatted wings? Says Nihart:

"F-14 performance to date has been dramatic and has met or exceeded both specification guarantees and Navy forecasts. For example, escort radius, on internal fuel only, will be almost 20 percent better than specified. Another example is approach speed, which was specified to be 132 knots but which actually is 117 knots.

"Actual flight-test comparisons of prototype F-14s with an F-4 chase plane to date reveal dramatic superiorities of the F-14. The F-14 requires only one-half of the F-4's takeoff and landing distances. Actually, the F-14 has taken off in less than 1,300 feet at maximum gross weight of 53,000 pounds. It has 30 percent less fuel flow at cruise speeds. It is more stable with the Stability Augmentation System off than the F-4 with its SAS on. The F-14 was almost 100 knots faster and two miles ahead after a side-by-side acceleration test with the F-4, going from Mach 0.8 to 1.2. Finally—and very important, since the accident rate on aircraft carriers is directly proportional to landing speeds—the F-14 has approach and landing speeds 25 to 40 knots lower than those of the F-4, which are given in **Jane's Aircraft** as 150 knots.

"Navy performance estimates of the F-14A and B show marked superiority over the F-4J equipped with slatted wings," according to Nihart. "At the request of Dr. John S. Foster Jr., Director of Defense Research and Engineering, the National Aeronautics and Space Agency (NASA) made an independent assessment which confirmed the Navy's estimates."

Superior performance

The F-14 out-performed the F-4J, whether slatted or not, in all the areas that count . . . turning, rolling, climbing, accelerating . . . slow-speed-turning flight . . . better combat radius and loiter time . . . more than twice the radar range with AWG-9 and more than 2½ times the missile range of the F-4J with the Phoenix . . .

In addition, the Company believes that the Tomcat will cut the maintenance manhours per flight hour to half that of the F-4.

And how about the threat? Well, according to Nihart, the aircraft considered in threat analyses are the lightweight MIG-21 Fishbed, the interceptor Su-11 Flagon-A, and the very high altitude MIG-23 Foxbat. "Against them," Nihart avers, "the F-14 is 'superior' to 'vastly superior' in all recognized fighter performance criteria. The F-14's advantage against threat aircraft and against current and improved F-4s comes from the very favorable thrust-to-weight ratio, the long-range radar and long-range Phoenix missile, aerodynamic refinements, and, especially for superior maneuverability, the computer-controlled swing wing."

Match-up with Soviet

As for the next generation Soviet fighter (dubbed Fearless), Nihart says that, by using "design points and computer analyses," intelligence experts and aeronautical engineers have been able to fix the "performance parameters for Fearless. It is close to the F-14A in performance, but the F-14B is superior to Fearless in all categories except radar detection range and missile launch range, in which it is equal."

However fine the F-14 may be, and however necessary to national defense it may be, there is another problem—one that consistently barks at its heels: **cost.** Critics have scored the program because (they claim) the initial cost of the aircraft was too high, and it looks as though there's a cost over-run in the offing. Nihart sees these "bum raps" as misunderstandings, as "an 'apples and oranges' proposition." Explains Nihart:

"The 'apples and oranges' problem relates to how many aircraft are being bought and what is included in the cost. The $7.8-million figure relates to flyaway cost—the actual production cost of airframe, engines, radar and other avionics, and gun—for a buy of 710

(Continued on page 11)

Name Hannan to Flight Test post

Joe Hannan, Flight Test manager of the F-14, has a new, double-barreled title in Flight Test: assistant director - Aircraft Programs, and Calverton Flight Test manager. He can be reached in Plant 7 on Ext. 445.

Joe Hannan

Hannan attended the Academy of Aeronautics and Adelphi University, and as an enlisted man, spent four years in the Navy, 1948-52. He was with a patrol squadron, VP-10, flying P2Vs. "We were stationed at Brunswick, Maine, and deployed to Iceland, Newfoundland, and North Africa," he says. This was a time when Soviet trawlers were giving problems in the North Atlantic.

Aircraft veteran

Since joining Grumman in August of 1955, Joe has concentrated on flight-testing. He started in Structural Flight Test with Georage Skurla, "and I've been in Flight Test all the time," he says. He was a gruop leader in Structural Flight Test and later, Flight Test project engineer on the A-6A, then Flight Test manager on the F-111 and the F-14.

Hannan lives in Shoreham with "my charming wife, Mary, and our four boys and six girls, ages two to 16."

Comin' home. Honor of first Tomcat flight over Bethpage went to No. 9 on December 29. It circled the field several times for F-14 Program people, and swept back its wings on this pass. No. 9 will go to Mugu for weapons system test. (Photo by Harry Prodromides)

Grumman team at Point Mugu speeds flight testing of F-14

POINT MUGU, CALIF.—A two-pronged flight test effort with Aircraft 4 at the Grumman Point Mugu Facility has furthered the rapidly progressing F-14 Flight Test Program.

Called by Tom Brancati, head of the West Coast operation, "an accomplishment unparalleled in the Weapons System development," Tomcat in two flights checked out all mechanical systems and demonstrated the F-14's advanced Weapons System design and capabilities. It is now in layup for incorporation of some "A" priority changes before going to Hughes next week.

"The proverbial one-two punch proved a successful combination," Brancati reported early this week, as Point Mugu civilian and military experts watched Aircraft 4's performance.

Following an extensive six-week layup for systems installation, Tomcat made a 1.7 hour test flight December 17 and a one-hour test flight on December 28. With a full complement of avionics and fire control systems on both flights, the plane met full approval of the Grumman test crew consisting of Project Pilot Hal Farley and System Operator Sam Ammons.

Systems check

Primary purpose of this first flight was to functionally check out all mechanical systems including the landing gear, variable wing sweep feature, flaps, and the primary and secondary flight controls.

Gene Morrison of Grumman Flight Test Project Engineering, who coordinated the scheduling (thereby assuring first flight milestones were met), ticked off some "firsts" associated with the first flight: a first for flight of an F-14 with full complement of systems, first for flight of an F-14 from a military installation. Russ Irwin, QC manager, chimed in, "It was also a first for release by military personnel of an F-14 for flight." Irwin assisted Lt. Cdr. R. A. Johnston, Quality Assurance officer, in releasing the Tomcat for this first post-layup testing.

'Total success'

The second flight was to demonstrate the F-14's advanced Weapons System design and capabilities, Brancati said. "The accomplishments of this first Weapons System flight of Aircraft 4 is the result of the Weapon System Integration development efforts in the SITS (System Integration Test Station) Laboratory. This effort," he said, "included the marriage of the Weapons System to the aircraft avionics and the tracking of live targets out over the expanse of the Pacific."

That flight was pronounced a total success except for two "minor crabs" reported by the crew. It included testing of Tomcat's Navigation System which "operated as expected with the predicted closeout effort, while the Fire Control system detected and tracked live targets as expected," Brancati said.

The combination of tests in SITS, according to Joe DeSimone, System, Test & Analysis project engineer, "led to the flight's success in which all systems operated in flight as they did during these lab tests."

"The importance of SITS testing is further enhanced," commented Brancati, "when you consider Navy accepted the Weapons System performance as a result of only one performance test flight."

The F-14A was accompanied on its test flights by two F-4 Phantom chase planes. The first F-4 was piloted by Lt. Col. Robert A. Christy of the Marine Air Detachment at Point Mugu, with Navy Lt. Jack Hawyer of the Naval Missile Center's Test Operations Department as Naval Flight Officer. The second craft was piloted by Maj. Fritz Menning with Lt. Cdr. Johnny Johnson as Naval Flight Officer. Both men are assigned to the Naval Missile Center's Program Office.

The F-14 Tomcat, designated Aircraft 4, and slated for transfer to Hughes Aircraft Company for contractor evaluation of the Phoenix Missile System, is now in layup for incorporation of some "A" priority Aircraft Directive Changes (ADCs) before debailment to the Hughes Company January 19. One other F-14 slated for Weapon System evaluation tests is now at Point Mugu and three more are slated to be ferried here for equipment installation and tests.

Snead salutes Mugu team

Lew Evans, Chairman of the Board and Chief Executive Officer of Grumman Aerospace, received the following letter last month from Rear Adm. L. A. (Swoose) Snead, Navy Program Director for the F-14.

14 December 1971

Mr. L. J. Evans
Chairman of the Board and
Chief Executive
Grumman Aerospace Corporation
Bethpage, Long Island, New York 11714

Dear Lew,

On 10 December I had the opportunity to visit Point Mugu to review the status of our program. I was particularly pleased to note the speed and competence with which the integration of the AWG-9 weapon control system was accomplished in aircraft #4.

This performance reflects the dedication to the task of our team at Point Mugu. I note with particular pleasure the confidence exhibited by Tom Brancati and his group. He has generated and manifested this confidence during the visit of Mr. Packard in early 1971 and recently with the visit of Admiral Kidd, our new Chief of Naval Material. It was very gratifying to see this confidence so clearly demonstrated by the accomplishment of the integration into number 4 in less than the scheduled period.

I'm sure you, as well as our fine team at Hughes, share my enthusiasm and I want to convey my appreciation for a job well done.

Sincerely,

L. A. SNEAD
RADM, USN

service milestones

35

George G. Trigg, Prototype (2)
August J. Ripp, Plt. Mgr. (3)
Earl T. Lewis, Tool & Die (55)

30

Lorenzo F. Zacarese, Proto. (1)
Anthony J. Bozzella, Sub-Assem. (1)
John L. Koloski, ESO (1)
Wilfred S. Hunt, Proto. (2)
John M. Sabia, GSE Mech. (2)
Anthony M. Albrecht, Plt. Mgt. & Staff (2)
James F. Kaehler, Prod. Mfg.-Bud. (2)
Myron E. Haff, Tool Fab. (2)
John C. Hatter, Mfg. Engg. & Staff (2)
Sven Abramson, Heat Treat (3)
Benjamin J. Mroz, Plt. Mgt. & Staff (3)
Edward P. Whelen, Prod. Ctl. Plt. Stores (3)
Bernard F. Woell, Prod. Ctl. Plt. Stores(3)
Fred G. Theobald, Fin. Assem. (4)
John F. Koscinski, Flt. Oper. (4)
Anthony Cosmo, Surfaces & Assem. (5)
John I. Patton, Bud. & Ctrl. (5)
Frank F. Ertl, Pre Flt. Fin. (6)
Charles E. Rogers, Elec. Repair (6)
John Dupcak, Plt. Mgt. & Staff (6)
George B. Shewan, Avionics Mgt. & Staff (6)
Joseph Hodl, Calverton MP&C (6)
William C. Donnelly, Tool Fab. (6)
Albert A. Knight, MP&C (14)
Emilio Lamberti, Shipping (17)
Frank Pewarski, Plt. Prot. (18)
Clarence W. Blyman, Plt. Prot. (18)
John McCarthy, Plt. Prot. (18)
Charles E. Nauss, Matl. Subcon. Mgt. & Staff (25)
Harry Goldbach, Repro (25)
Frank Illari, Plexiglass (27)
John W. Squier, Sub-Assem. (27)
Anthony Marshut, Sub-Assem. (27)
Robert A. Silz, Plt. Mgt. & Staff (27)
Thomas F. Newsham, Plt. Mgt. & Staff (27)
Joseph Graham, Plt. Mgt. & Staff (27)
Charles F. DeMonaco, Mach. Parts (30)
Carl N. Sandford, Subcontract Mgt. (30)
Charles F. Kobylak, Wire Prep. (33)
John Deinhardt, Train. & Dev. (39)
Alfred A. May, Minor Assem. (55)
George B. Mitchell, Field Base Admin. (75)
Edward Mussler, P/S, A/C (80)
Charles Kolonoski, KSC Mfg. Shops (87)
Herman D. Siegel, QC Supplier (87)
Lawrence T. Bignami, Production (88)
Anthony L. Hronick, P/S A/C Site Mgt. (89)

25

Robert C. Simonetti, Fuse. Fwd. (1)
Robert Strnad, Hyd. (1)
Stanley J. Wierzbicki, Router & Shear (2)
Frederick R. Hicks, Facil. Maint. (2)
Wallace Snyder, Spotweld (3)
Harold F. Klaiber, Fin. Assem. (3)
Joseph Domanski, Wing. Fin. Assem. (3)
Ernest J. Anzalone, Wing. Fin. Assem. (3)
George R. Wurston, Mach. Oper. (3)
Frank B. Pennino, T/M Engg. (3)
Lester H. Whaley, Prod. Ctl. Plt. Stores (5)
Karl P. Weber, P/S Prov. Doc. (15)
Richard T. Knadle, Sub-Assem. (27)
Anthony F. Campagne, Prod. Ctl. Plt. Stores (33)

Happy anniversary!

Lothrop S. Perkins, Struct. Anal. (35)
Alfred A. Wathne, Uphol. (36)

20

Howard Hieronymi, Fuse. Fwd. (1)
Henry F. Hauser, Prod. Proj. Mgrs. (1)
Alexander Ferrara, F-14 Mfg. (1)
Raymond G. Miller, Ctr. Sect. Fin. (2)
Arthur W. Cooley, M P & P (2)
James O'Brien, Prod. Mfg. Adm. (2)
Donald H. Whitlock, Prod. Ctl. Plt. Stores (2)
Edward B. Maguire, Tool Fab. (2)
Benedetto J. Bruno, Tool Fab. (2)
Albert Kost Jr., Tool Fab. (2)
Joseph P. Perkowski, Tool Fab. (2)
George E. Rochedieu, Insp. - Mech. (2)
Catherine Zuk, ESO (2)
Reaver B. Shelton, Mach. Shop (3)
Charles Blazeyewski, Honeycomb (3)
Paul Langona, Mach. Oper. (3)
John Tylinski, Maint. (3)
Lorenz Keller, Maint. (3)
Stefan Gapinski, Static Test (5)
Florence A. Richards, Corp. Serv. Mgt. & Staff (5)
Edward M. Collins, Maint. Ind. Ctrl. (5)
Charles C. Birs Jr., Shock & Vib. Test (5)
Rudolf P. Altmann, Tool Fab. (6)
John L. Rannou, Tool Fab. (6)
Harold Wiegner, Instr. A/C Test (13)
Seymour Glick, Contracts A/C (15)
Carmine J. Abate, Shipping (17)
Andrew J. Reder, Shipping (17)
Philip Hill, Trans. (20)
Thomas Fitzpatrick, B/P & Off-Site Whses. (21)
Leonard Tessier, Receiving (24)
Robert H. Cahill, Facil. Maint. (26)
Daniel F. Schirmer, Sub-Assem. (27)
Walter Kerupetski, Prod. Ctl. (27)
John R. Russ, Tool Fab. (27)
Lester R. Picardi, Pwr. Plt. Des. (27)
William C. Boyce, GSE Mech. (33)
Teresa Ditta, Food Serv. (33)
Ralph E. Guion, Elec. Opt. Sys. (34)
Joan M. Shannon, Info. Rec. & Serv. (35)
Elsie V. Madigan, Repro. (35)
Richard Aiello, Rel. & Ctrl. (35)
Paul B. Cooper, KSC QC (83)
Albert F. Burri, KSC Mfg. Shops (83)

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George J. Wagner, Fuse. Fwd. (1)
Vincent J. Maroldo, Facil. Maint. (1)
Vincent F. Fiust, Repro (1)
Friedrich R. Wilms, Environ. Ctrl. (1)
Albin Boryswicz, Mach. Engg. (1)
Edward L. Smith, Insp-Mech. (1)
Walter J. Budd, Insp-Mech. (1)
George Sustman, Tanks & Ducts (2)
Alvin E. Schreyer, Mach Shop (2)
Donald L. Swezey, Clean. & Descaling (2)
Joseph H. Boccuzi, Prod. Ctrl. (2)
Robert E. Box, Maint. (2)
Anthony Santa Maria, Maint. (2)
George H. Baker, Maint. (2)
Ray Bradenburg, Facil. Maint. (2)
Louis Oliveira, Facil. Maint. (2)
William T. Fraser, Present. Serv. (2)
Richard R. Organ, Insp-Mech. (2)
John J. King, Insp-Mech. (2)

(Continued on page 10)

R. C. Simonetti | R. Strnad | F. R. Hicks | W. Snyder | H. F. Klaiber | J. Domanski

E. J. Anzalone | G. R. Wurston | F. B. Pennino | L. H. Whaley | K. P. Weber | R. T. Knadle | A. F. Campagne | L. S. Perkins | A. A. Wathne

Why wait? Get your feet wet . . . visit 62nd National Boat Show

It may not have the emotional appeal of a bruising Super Bowl or the indescribable excitement of a Knicks-Bucks playoff series, but for boating enthusiasts at least, nothing quite rivals the National Boat Show.

So when the 62nd National Boat Show opens at the New York Coliseum for a nine-day exhibit starting Saturday, January 22, thousands and thousands of fresh and salt water sailors are expected to begin lining up to view things nautical.

It promises to be quite a show. Depending on your taste—and your bank account—you should be able to select just about anything you could hope for, ranging from a 42-foot sedan cruiser tagged at $114,000, to a six-foot fun boat selling for $119. In all, there will be about 500 recreational craft on display, including cruisers, runabouts, utilities, jet and hover boats, auxiliaries, one-design sailboats, prams, dinghies, canoes and rowboats. And if that's not enough there will be inboard gasoline and diesel marine engines, gas turbines, outboard motors, stern drives, and thousands of boating accessories, too.

Pearson Yachts of Portsmouth, R.I., a subsidiary of Grumman Allied Industries, will have the largest sailboat on exhibit — a Pearson 390 double-cabin sloop spreading 666 square feet of sail —along with the Pearson 30 sailboat and the Portsmouth 43 off-shore powerboat.

If your idea of fun runs to something smaller, maybe one of the four aluminum canoes displayed by Grumman Boats of Marathon, N. Y., will fill the bill. The four, representative of the Grumman Allied subsidiary's full line of aluminum canoes, include two 17-footers (one a square-stern model), a 13-foot lightweight model, and a 15-foot 3-inch Sportcanoe that can be paddled, sailed, rowed, or powered outboard.

Discount tickets

The show is open to the public starting Saturday, January 22, at 10 a.m. Exhibit hours are:

Both Saturdays, 10 a.m. - 9 p.m.; both Sundays, 1-7 p.m.; Monday, January 24, 5 - 7 p.m.; Tuesday, January 25, through Friday, January 28, noon - 9 p.m.

Admission fee: $3 for adults, $1.50 for children 12 and under (tax included).

Gus D'Errico, who heads Employee Services, advises Grummanites to check their plant ESO before heading for the Boat Show; he expects to have some discount tickets on hand by then.

If you're a boating enthusiast—even if you're a football or basketball fanatic who never gets any closer to the action than the sideline—why wait until warm weather rolls around to get your feet wet? Start early. And bring along your check book. Let's see; that 42-foot sedan cruiser goes for only $114,000.

Sweet sailing. The Pearson 390, a double-cabin sloop, houses a galley, convertible dinette, and is built for comfortable sailing. The Bill Shaw creation will be on display at the Boat Show.

Versatile watercraft. The Sportcanoe, which will be on exhibit as part of the Grumman Boats display, can be paddled, sailed, rowed, or powered by outboards up to 5 hp.

Hazel climbed toward sky . . . and loved every minute of it

Hazel Milone

"Send Hazel. She can do the job."

And thus Hazel Milone ("I'm a mixture of Italian and Irish") had the chance to be hoisted 350 feet above Launch Pad 39 and into the cockpit of the next Lunar Module, LM 11, which will take the Apollo 16 astronauts to the moon.

"Space" is Hazel's hangup. To have a chance to go to Cape Kennedy and help make the LM 11 a safe vehicle for the Apollo 16 crew was her idea of absolute heaven. She'd go right along to the moon if she could.

Hazel worked in the U.S. Naval Torpedo Station at Newport on depth charges and gyros during World War II. Then she joined the Women's Army Corp and went to the Southwest Pacific, where she was a battalion commander's driver in Australia, Hollandia, New Guinea, Leyte, and Manila. That gives you an idea of the kind of person she is.

After she had come to work for Grumman more than five years ago, she volunteered to become a sealant technician and quickly made sure she learned everything there is to know about it. She is in charge of the potting and sealant section in LM Panel Display, Plant 5.

When NASA told Grumman last fall that some assistance was needed at the Cape, Al Haberski of Avionics Management asked if she'd like to go and work on the LM. Hazel's reply, characteristically, was "And how, I'll go!"

The problem on the LM 11 was this: the glass in an instrument, bought from a subcontractor, had shattered during the Apollo 15 mission, and while it would have been unnecessary to keep someone there at the Cape full time, extra precaution against a glass shattering again was indicated. The need was for a technician to apply an extra housing to a range rate instrument in one of the LM panels. Hazel practiced a couple of months ahead of time on LTA-1 in Final Assembly, as well as in her own work area, to perfect her technique, and when, in December she was actually on the job in her white suit and hard hat she said she did even better. Used her little syringe and the EPON 934 epoxy adhesive to make a retainer for the range rate indicator.

The reason it hadn't been done in Bethpage was that LM 11 had been sent to the Cape before LM 10 in Apollo 15 was launched, and no such previous problem had existed.

"To think that I was chosen . . . especially being a woman. I had no fear at all; just went up there lovin' it," she said afterward.

List schedule of Training & Development classes . . .

Corporate Training and Development is offering a number of after-hours courses again this semester to help students expand their knowledge and brush up on their skills. Registration is by phone, starting 8 a.m. Monday, Jan. 17 and continuing until 4:30 p.m. Friday, Jan. 28. There are no fees or tuition charges.

The courses listed are available to Grumman employees. For some courses there are prerequisites. Students need not have fulfilled a particular prerequisite by taking voluntary education courses: courses taken elsewhere or work experience can prepare a student for the more advanced courses.

For all courses, a minimum registration of 15 students is required.

Enrollment procedure

Enrollment is strictly voluntary. Students may register by calling the Voluntary Education Office at the extensions listed below. **Please note:** a specific phone extension is assigned for registrations for the day on which a course is given. The extension listed below which is prefixed by an asterisk (*) will be connected **only during the registration period.**

Registration calls will be accepted ONLY from 8 a.m., Jan. 17, through 4:30 p.m., Jan. 28, 1972 each working day.

Bethpage courses:

Monday evening courses - call Ext. 87521*
Tuesday evening courses - call Ext. 87522*
Wednesday evening courses - call Ext. 84413
Thursday evening courses - call Ext. 1282*
All Calverton evening courses - call Ext. 381
To reserve Programmed Instruction Text - call Ext. 84413

Certificates

Certificates will be issued to those students who have attended at least 80% of the sessions and have completed the required work in a creditable manner. Further information can be obtained by calling the Voluntary Education Office on Ext. 84413.

Student cost

There are no fees or tuition charges. However, students are expected to purchase their own textbooks. Textbooks may be purchased anywhere, but for students' convenience, the Voluntary Education Office will have textbooks available for purchase through the course instructor.

A number of Programmed Instruction courses are being offered. As the texts used for Programmed Instruction are not reusable, a flat fee of $5 per Programmed Instruction text will be applied. Check or money order must be made payable to Grumman Aerospace Corporation. Programmed Instruction courses may be obtained at the Voluntary Education Office, Plant 39, Bethpage.

The following list of courses being offered by Corporate Training and Development includes title, course number, description of course, section number (if more than one section is being offered), instructor, location and time of class, and starting date. For registration, refer to title, course number, and section (if more than one class offered).

Computer Programming - COBOL (FF 00001 - 30 hrs)

Covers the COBOL language and its application to business problems. Topics to be included are: organization of a COBOL program, fundamentals of flow charting, COBOL language structure and usage, review of compiler diagnostic messages, and class problems.
Prerequisite: Introduction to Computer Programming or equivalent.
Section 1 - A. Pagoto, Room 110, Bethpage H.S., 5-7 p.m., Mon., Feb. 14.
Section 2 - B. Abrams, Room 110, Bethpage H.S., 5-7 p.m., Wed., Feb. 16.

Computer Programming - FORTRAN (FF 00002 - 30 hrs)

Introduces the basic concepts of a digital computer and how to program it in FORTRAN. Will enable the student to set up problems for solution on the computer using this language.
Prerequisites: Algebra.
Section 1 - J. Vosefski, Room 110, Bethpage H.S., 5-7 p.m., Tues., Feb. 15.
Section 2 - R. Sacks, Room 110, Bethpage H.S., 5-7 p.m., Thurs., Feb. 17.

Computer Programming, Introduction to (FF 00003 - 30 hrs)

Intended for those students who have had little or no exposure to computer programming, and intend to take programming courses devoted to a particular language.
Course includes: philosophies of programming, representation, presentation and transfer of information, problem analysis, program organization, coding and an introduction to FORTRAN, COBOL, ALGOC and PL/1.
Section 1 - G. DiBenedetto, Room 112, Bethpage H.S., 5-7 p.m., Thurs., Feb. 17.
Section 2 - M. Blyseth, Room 112, Bethpage H.S., 5-7 p.m., Tues., Feb. 15.

Computer Resources Management (For non-EDP managers) (FF 01021 - 30 hrs)

Designed to present computer resource information to non-EDP managers so that they will know what parameters to consider in their decision processes.
G. DiBenedetto, Room 115, Bethpage H.S., 5-7 p.m., Wed., Feb. 16.

Electronic Communications Equipment (FF 01025 - 40 hrs)

Broadcast Receivers, theory of operation of circuitry, test and troubleshoot the circuits, using oscilloscopes, generators, voltmeters, etc., hands-on application of this equipment.
R. Volino, Room 8, Plant 6 (Calverton), 4:30-7:30 p.m., Mon., Feb. 14.

Industrial Writing (FF 01028 - 30 hrs)

This course is designed to make your on-the-job writing easier, yet more communicative. Offered are the mechanics of organization, with regard to purpose, reader's needs, outlines; of effective writing, with regard to preciseness, directness and emphasis; and of reading ease, with regard to formats, simplicity and brevity.
These mechanics will be applied to writing in general. But examples of writing to prescribe, to report and to persuade will be treated. Class participation and occasional homework can be expected.
W. Fleischhauer, Room 111, Bethpage H.S., 5-7 p.m., Tues., Feb. 15.

Integrated Circuits for Engineers (FF 00329 - 30 hrs)

Introduction to integrated circuits manufacture and techniques, their use in logic and computer design, micro-circuit families, and linear circuits. Objectives of course are to answer such basic questions as: What are the IC? How are they applied in the military and industrial consumer fields? What can the ICs do? What are their limitations?
The engineer using ICs should know the costs versus results obtained as well as input and outputs of ICs. He should also know what testing and fault isolating techniques can be used without impairing the IC.
Prerequisite: Transistor for Engineers I or II (or equivalent).
V. Sanford, Room 117, Bethpage H.S., 5-7 p.m., Tues., Feb. 15.

Manufacturing Methods II (FF 00043 - 30 hrs)

A continuation of Manufacturing Methods. Will cover: tool order, tool route cards, operation sheets, introduction to the automated system of operation, aircraft lines drawing as related to tooling, configuration.
Prerequisite: Manufacturing Methods I or equivalent. P. Bernardo, Room 3, Plant 39, 5-7 p.m., Mon., Feb. 14.

Materials Application Engineering (FF 01030 - 30 hrs)

This course is designed to present to both subsystem and shop personnel an understanding of materials selection, materials finishing, and materials joining.
This course would answer the queestion "Why that material"? Often encountered in component design."
R. A. Hoffmann, Room 114, Bethpage H.S., 5-7 p.m., Tues., Feb. 15.

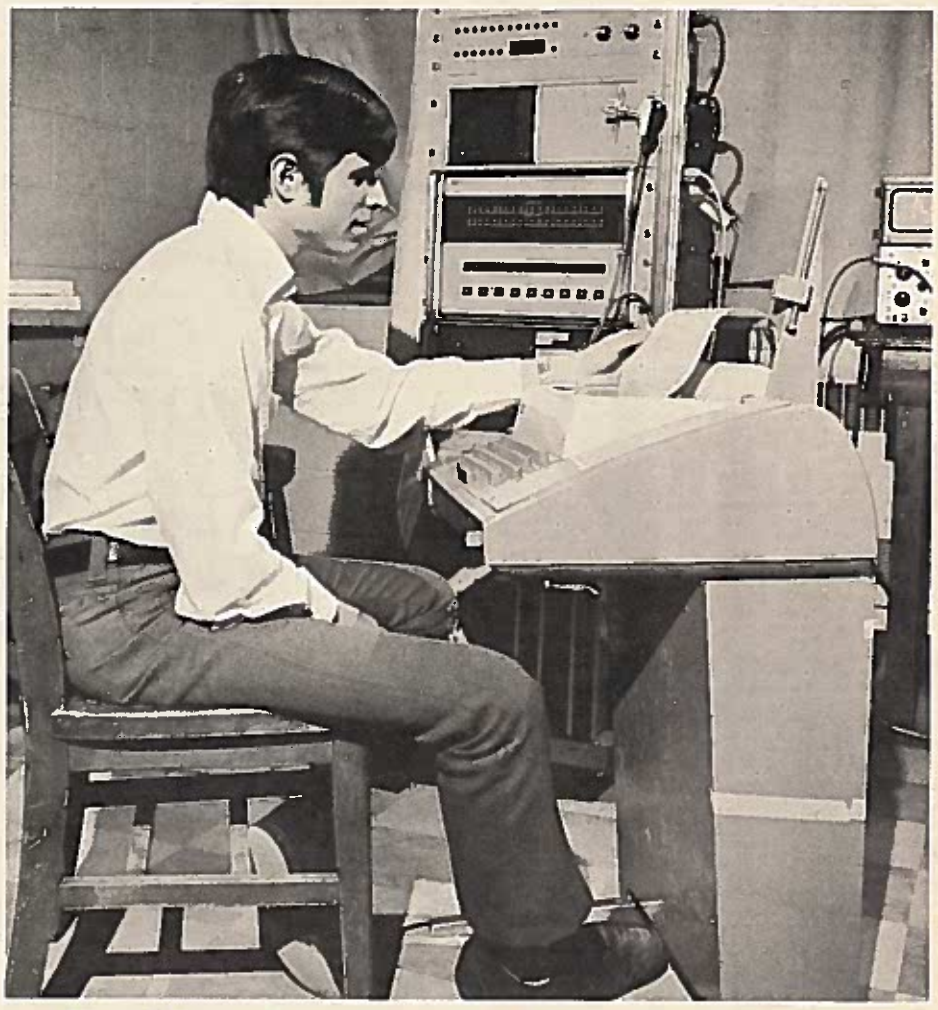
Laser Technology (FF 00528 - 26 hrs)

Designed to give engineering personnel an understanding of lasers and laser systems. Lectures on: laser background, types of lasers, nonlinear optics, holography, laser characteristics, laser scanning systems, ancillary system elements.
Prerequisite: Engineering degree.
K. Leib, Conf. Room 1 & 2, Plant 14, 5-7 p.m., Tues., Feb. 15.

Linear Control Systems (FF 00070 - 30 hrs)

For those with an engineering or science degree. Course will include mathematical modeling of linear control systems and analysis of these systems using both time and frequency domain technique.
Prerequisite: Differential Equations.
R. Quinn, Room 4, Plant 39, 5-7 p.m., Wed., Feb. 16.

(Continued on page 9)



'Speak to me.' **Grumman Scholar Bill Jaklitsch carries on a conversation with a computer he has programmed for studies at Clarkson College of Technology in the field of artificial intelligence. Responses are triggered by the use of any of 50 key words.**

Ag-Cat still first on hit parade of country's crop-duster pilots

"It's almost embarrassing," Earl Duhame commented the other day. "You talk to pilots of the Ag-Cat and find their respect for the plane is without bounds. The pilots seek me out at their association meetings to tell me what a helluva good aircraft we've got. You never hear anything bad about the airplane. Most of the crop-duster pilots have flown them all; most recognize this plane to be in a class by itself."

Duhame is the obviously biased Ag-Cat Program manager, devoted to the low-flying, ageless biplane that was designed by Grumman in the early '60s and has been produced by Schweizer Aircraft of Elmira, N. Y. ever since. "We've had no really serious sales letup in four years, in spite of the national economy," he says. "We've never dropped lower than six a month, and mostly we've been turning out eight to twelve a month. This year is shaping up well and could turn out to be our biggest year yet." Coordinating production to demand is one of "the greater challenges of the job," Duhame added.

Even the kids become Ag-Cat fans. A young fellow from Texas who must have been hobnobbing with some Ag-Cat pilots (there are at least 150 Ag-Cats in Texas, Duhame says), wrote in for literature the other day. "Since I am only 13 years of age I would not be interested in one of your representatives contacting me, but the minute I saw your plane I fell in love with it," he said. "I hope . . . you will thank your employees for producing such a fine plane."

"We get fan letters from the pilots' girlfriends, too," Duhame added. "They all value the Ag-Cat for its safety record—which happens to be the best in the industry."

More than 80 percent of Ag-Cats' advertising budget is spent on foreign advertising, the Program manager said. "We have them flying in Australia, Yugoslavia, Kenya, Zambia, Ethiopia, the Sudan, the Philippines, Colombia (just lately)—and in 21 other foreign countries."

For rice cultivation its virtues are unsurpassed, since a rice crop requires aerial applications (seeding, fertilizing, fungus control, insecticides, pesticides) eight to 10 times a season. Efforts are being made, of course, to minimize pollution through more frequent application of insecticides that have low persistence. DDT, says Duhame, has done for humanity far more good than harm, and "you have to have something effective to keep ahead of fungus and blights and insects. Some day biological control may supply the answer."

Although the airplane has been in production for 12 years, there is no indication that its popularity is declining. Its full capability is only just now being realized, for, as Duhame points out, it has taken operators a long time to see that the low maintenance and higher productivity of the Ag-Cat more than justify the relatively high original investment.

Here she comes. **Under wires and over treetops, the maneuverable Ag-Cat biplane, with an inimitable safety record, appeals to pilots and owners alike. Its reputation stretches all the way to Zambia.**

. . . registration for spring term starts Mon., Jan. 17

(Continued from page 8)

Basic Stress (FF 00708 - 30 hrs)
Grumman employees involved in the preliminary layout of structural components are instructed in the elementary methods of stress analysis. Simple calculations that will allow them to size such structural elements as beams, stringers, shear panels, etc. New employees will be indoctrinated in the analysis of thin gage, lightweight components.
Prerequisite: High school math to Trigonometry.
P. Floyd Thomas, Room 3, Plant 39, 5-7 p.m., Tues., Feb. 15.

Cryogenic Engineering (FF 00710 - 34 hrs)
Introduces basic concepts of low temperature engineering, with heavy emphasis in the use of hydrogen and oxygen technology for both space and earth applications. Course includes: thermodynamics fundamentals, properties of materials, vacuum technology, fluid flow, heat transfer, test operations and safety.
Prerequisite: Engineering degree or equivalent.
W. Contreras, Room 115, Bethpage H.S., 5-7 p.m., Tues., Feb. 15.

Stress Review for Engineers (FF 00709 - 30 hrs)
The analysis of complicated structural components and assemblies such as bulkheads, fuselages, wings, and related connections. Advanced methods of stress analysis are used employing strain energy, virtual work, elastic centers. These complicated problems are computer oriented and are also analyzed by matrix and computer problems.
Prerequisite: Engineering degree or equivalent.
O. Lourenso, Room 111, Bethpage H.S., 5-7 p.m., Thurs., Feb. 17.

Stress Review for Engineers II (FF 00871 - 30 hrs)
Will emphasize practical applications to current design problems. Analysis procedures in use at Grumman will be reviewed. Course will cover fatigue analysis, including an introduction to fracture mechanics. Instability analyses will include diagonal tension shear webs, local buckling and crippling and column interaction, basic principles of thermal stresses and material properties at elevated temperatures.
T. Taglarine, Room 117, Bethpage H.S., 5-7 p.m., Thurs., Feb. 17.

Introduction to Hydraulics (FF 00039 - 30 hrs)
Covers development of basic hydraulic systems, including basic physics which govern fluids, prints, hydraulic fittings, component and lab work.
Prerequisite: Basic Mathematics.
E. Baumgart, Room 3, Plant 39, 5-7 p.m., Wed., Feb. 16.

Reading Improvement (FF 00020 - 33 hrs)
For the average or above average reader who wishes to read more efficiently. Through systematic classroom exercises, the student will substantially increase his reading speed and comprehension.
G. Ballard, Conference Room A, Plant 25, 5-6:30 p.m., Mon., Feb. 14. (Meets on Mon./Wed.)

High School Equivalency (FF 00016 - 60 hrs)
Instruction, review, and preparation for taking the High School Equivalency test. Areas of concentration: Mathematics, Sciences, English, Social Studies. All applicants pre-tested prior to being admitted to course.
Prerequisite: 18 years of age or older; out of school at least one year.
H. Brochyus, Room 9, Plant 39, 5-7 p.m., Mon., Feb. 14. (Meets on Mon./Wed.)

Developmental Reading (FF 00260 - 45 hrs)
Designed to aid individuals to improve reading rate and comprehension. Student sets his own pace. Program provides an enjoyable method of learning reading skills.
E. Baumgart, Room 9, Plant 39, 5-7 p.m., Tues., Feb. 15. (Meets on Tues./Thurs.)

Effective Technical Presentations (FF 00019 - 30 hrs)
A course to prepare engineering and administrative personnel to give brief, coherent, and successful oral presentations. Includes tailoring a presentation to a specific audience, organizing material for most effectiveness, selection and preparation of visual aids, platform techniques. Practice presentations and class critiques.
G. Breen, Room 6. Plant 39, 5-7 p.m., Tues., Feb. 15.

Shorthand, Gregg Refresher (FF 00023 - 30 hrs)
For the individual who wishes to refresh or rebuild skills in shorthand. Provides dictation and transcription practice geared to industrial requirements.
M. Wolfe, Room 113, Bethpage H.S., 5-7 p.m., Wed., Feb. 16.

Typing, Beginners (FF 00030 - 30 hrs)
For those who desire a skill in typing. Through regular classroom practice and drill, students will acquire the necessary keyboard control essential to good typing techniques.
Bethpage High School instructor, Room 109, Bethpage H.S., 5-6 p.m., Mon., Feb. 14. (Meets on Mon. & Wed.)

Home studies
For those who are unable to take advantage of the Voluntary Education program after normal working hours, the following Programmed Instruction (P.I.) courses are being made available, in limited numbers. These are self-teaching programs. Certificates will be awarded those who complete the course satisfactorily. (Fee $5 per course.)

Introduction to Electronic Data Processing
Pressure & Its Measurement
Liquid Level Measurement - Part I
Improving Your Written Communications
Methods Improvement and Work Controls
The Secretary - Jill of all Trades
Cutting Office Costs Through Work Simplification
Trigonometry - A Practical Course
The Arithmetic of Computers

plane
GRUMMAN
news

Published twice a month for the employees of Grumman Aerospace Corporation, Bethpage, N. Y. 11714, as a function of the Public Affairs Dept., Vice President J. B. Rettaliata, director.

Editor
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Ads, Distribution
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Official Photographers
Presentations Services

Telephone
Plane News: 3293
Plane News from outside line:
LR 5-3293

Turley pockets big bond award by cutting down work backlog

Some of the best employee suggestions seem to come out of a situation where the suggester had a backlog of work he didn't really think was necessary. It was that way with Bruce Turley, now of Business Controls, E-2C Program, Plant 15, but formerly of P/S Engineering Planning Implement & Control, Plant 25.

Turley has just received a $1,300 Savings Bond award from Grumman for suggesting the elimination of some of the failure evaluations on ground support equipment for LM because they took a great deal of time to prepare and had no real effect on the safety of the

Bruce Turley
High on suggestion list

equipment. "I had to find a way to get rid of our backlog," he says. "At one time it had seemed essential to prepare these written analyses, but the unknowns became knowns, and it became possible to get approval from NASA to eliminate much of the paperwork that had been taking so many hours."

Turley's award is based on savings realized since June of 1970, when he first filed his Project Sterling form. He has been with Grumman five years and has five children, including five-year-old twins.

Two high-money winners are from Kennedy Space Center, Plant 83. Jim Hildenbrand has been with Grumman eight years, five of them in Florida, and he likes it there. He hopes the Space Shuttle will come along before his LM duties phase out.

Idea for storage

Hildenbrand is a fluid mechanical technician on ground support equipment, and his suggestion was to store pressurized units of LM ground support equipment in expanded metal screening instead of under plastic, as before. The metal mesh panels fastened over open sides afford the required ventilation to the GSE and permit the whole unit to be integrity sealed. DRs (discrepancy reports) have been eliminated and downtime reduced. His award of $750 in bonds came as "a big surprise. I had no idea I'd get anything like that for it," he said. The Hildenbrands have three children.

An award of $625 in bonds recognized the value of a suggestion Marion Hunter submitted in 1969. It is judged to have saved many, many hours of paperwork and to have improved accuracy in making out status sheets.

EDP cards

Hunter, an inspector in Quality Control, midnight-to-eight shift, is working on Launch Pad 39 at Cape Kennedy on LM checkout for the Apollo 16 launch. "I'm a missile gypsy," he says. For three years he has been with Grumman in Florida, and before that he worked in Wyoming, Colorado, New Mexico, and California on space projects. He lives in Titusville.

His idea was to save the recopying, by hand, of data to be submitted to the Operations Control Center, using, instead, the more reliable procedure of electronic data processing load sheets, from which cards are key punched. "There was a great potential for human error, and too much time was spent in paperwork."

Hunter's $625 in bonds goes into the bank for his two sons' college education.

KSC winners. **Marion Hunter (L) of QC and Jim Hildenbrand of Manufacturing Shop, both Plant 83, saw ways to cut down on paperwork and clerical errors. Their suggestions for improvement are estimated to have saved the Company many thousands of dollars. Hunter received $625 and Hildenbrand, $750 in Savings Bonds.**

Marion is a wood-working enthusiast who has built almost all the furniture in the Hunter house.

Other awards were:

$350: Henry H. Gerkens, Steel Parts Assembly, Plant 2.

$200: Herman R. Behan, T/M Engineering Methods, Plant 2; Albert Umbach, Electrical Fabrication, Plant 1.

$150: James Hasselbring, Machine Operation - Technical Service, Plant 3; Robert Toye, Critical Material Control, Plant 24.

$125: Joseph Malina, Small Tool Repair, Plant 12.

$100: Fred Gsell, System Support, Plant 7; Jack Beiderman, P/S Computing System, Plant 30; Alvin Beyerlein, Sub Assembly, Plant 1; Rocco Famiglietti, Sub Assembly, Plant 1.

$75: Edward A. Boyle, Sub Assembly, Plant 27; Roy W. Dobbins, Sub Assembly, Pant 27; Robert W. Gibian, MSC Manufacturing Shops, Pant 52; Frank Futo Jr., KSC Manufacturing Shop, Plant 83.

$50: Ernest L. Spence, Structural Test, Plant 5; C. E. Harry, Equipment Engineering, Plant 30; Fred Cestari, Critical Material Control, Plant 17.

On the move

The Field Base Administration office, formerly in Plant 28B, was relocated to Plant 28 on Monday, January 10. The phone extension is still the same—1801.

Our mistake

John Kozsdiy of Industrial Engineering, Plant 33, completed 20 years with the Company on December 5, but his name got lost from the official 20-year roster last month. It is hereby restored, with regrets from Plane News for the omission.

service milestones

15

(Continued from page 6)

Haywood T. Hammond, ESO (2)
John Miller Jr., Chem Mill (3)
William Gandley, Chem Mill (3)
Bernard W. Dwyer, Fin. Assem. (3)
Joseph Falco, Wing Fin. Assem. (3)
Paul K. Barry, Wing. Fin. Assem. (3)
Robert J. Cardinale, Fuse. Assem. (3)
Robert C. Andrews, Honeycomb Prep. (3)
Anton L. Eser, Prod. Ctrl. (3)
Owen Edwards, Facil. Maint. (3)
Jerome W. Barlow, Flt. Transp. (4)
William King, Ecosys. (4)
Charles B. Cook, Aerodynamics (5).
William J. Tebo, Prod. Dev. Staff (5)
James M. Minicozzi, Inst. Sys. Des. (5)
Stanley J. Domagala, Contracts A/C (5)
Kathleen Wolfe, Oper. Plng. & Budg. (5)
Carmine N. Di Mare, Instr. A/C Test (6)
William Despagni, Fin. Paint (6)
Robert J. Kobus, T/M Engg. Meth. (6)
Robert W. Thompson, Tool Fab. (6)
Florenz McGinnis, Facil. Maint. (6)
Joseph Kneski, Facil. Maint. (6)
Henry H. Buckley, Pre Flt. Finals (7)
John D. Gazzola, Pre Flt. Finals (7)
August P. Jauch, Insp-Mech. (7)
Henry Augustin, Maint. (12)
Joseph F. Kessler, Maint. (14)
Howard A. Healy, Plt. Prot. (18)
Arthur J. Pidgeon Jr., Struct. Anal. (25)
Walter O. Besendorfer, Struct. Anal. (25)
Walter Blazejewski, Plexiglass (27)
William C. Taylor, Employment (28)
Helene G. Stone, Sec. & Pers. Serv. Mgt. (28)
Frances E. Zuk, Procure. Serv. (30)
Nelson Simpson, Inven. Ctrl. (30)
Henry C. Hering, Rqmts. Plng. (30)
Abraham D. Ackerman, P/S Cust. Orders (30)
Dominick M. Cutalo, Mat'l. Acctg. (30)
Alice G. Kehoe, Mat'l. Acctg. (30)
Joseph T. Hogan, Wire Prep. (33)
John M. Donovan, P/S Prov. Req. (34)
Edwin Lerner, Dyn. Struct. Meth. (35)
Joseph E. German Jr., QC Qual. Engg. (35)
William W. Williams, Sub-Assem. (36)
Robert L. Feinman, Surfaces & Assem. (36)
Robert D. Anglo, Insp-Mech. (36)
John J. Fox, Maint. Repair (37)
Howard T. Holland, MSC Base Mgr. (52)
Louis H. Bohn, Pre-Flt. (55)
Michael Tama, Maint. Admin. (56)
Richard L. Hill, KSC Mfg. Shops (83)
Frank J. Pauly, Engg. (88)

Navy team on Bethpage visit for review of E-2C trainer

While flight development work continues on the E-2C avionics systems, and the new overland radar continues to prove its effectiveness, other facets of the program are being tied together to keep the Hawkeye on track toward the big date: first Fleet delivery of the E-2C, scheduled for May 1973.

In the middle of December, a Navy team from Naval Air Systems Command, Naval Air Technical Training Command, and the Naval Training Device Center came to Bethpage for a mockup review and preliminary design review of the E-2C tactics trainer.

The Tactics Trainer, which duplicates the consoles and displays in the "back end" of the Hawkeye, permits radar officers and technicians to gain valuable operational training in airborne-early-warning and intercept-control, vital Fleet defense roles for the E-2C.

Combat experience

Instructors can "plug in" various types of tactical situations which are then displayed on the console scopes, thereby creating a tactical combat environment within the confines of the trainer.

During the recent visit, the Navy team was focusing on more immediate priorities: checking the location of the displays and control and other types of equipment, seating, and so on.

Following the design review, Navy and Grumman representatives met to examine all of the suggestions for possible inclusion in the physical layout of the trainer.

The contractors associated with the E-2C tactics trainer include Singer-Link of Sunnyvale, Calif., video system; Singer-Link of Binghamton, N. Y., audio system and instructor station; and Systems Engineering Labs, Ft. Lauderdale, Fla., simulation computer. Grumman, as prime contractor is responsible for program management, integration and checkout of the various systems, fabrication of console hardware, and logistic supprt.

When completed, the Hawkeye Tactics Trainer will be located at Glynco, Ga., home of the Naval Air Technical Training Command.

Hawkeye chief. **Tom Guarino, E-2 Program director, presented Hawkeye model to Capt. W. D. Harkins, commanding officer of the Naval Air Rework Facility, upon completion of modification of final E-2A to E-2B configuration. In all, 46 E-2As were updated with advanced avionics to improve their flexibility and reliability. (Navy photo)**

Mockup review. **Cdr. Jim Victor of NASC sits with Walt Weber, E-2C Tactics Trainer manager, inspecting console layout during mockup review last month. Standing by are (L to R) Jim Gould and Pete Marques of E-2C Product Support; Larry Kollender, E-2C asst. Support program manager; Dean Cassell, E-2 program manager; Lt. R. D. (Rocky) Mignogna, NATTC; and Tony Italiano, E-2 Support program manager. (Photo by Fred Annette)**

Spreading the word

You'll be hearing more about Grumman's now-famous heart transplant patient, Richie Cope of Machine Operations - Technical Service, Plant 6. So enthusiastic is he about the 18-year-old heart that proved to be a "gift of life" for him in 1970 that he, with Grumman's cooperation, is making radio and television appearances on behalf of the American Heart Association.

Next week he'll be speaking upstate, but Monday you can catch him on WGBB, appearing with Dick Dunne of Grumman Public Affairs for Space. He was recently on David Frost's TV program for a 45-minute interview. "Beautiful!" was co-worker Pete King's comment on the way Cope fields questions and explains the miracles of today's scientific advances.

Mourn Dan Culleton, Production director

Dan Culleton

Daniel W. Culleton, director of Production since 1968 and a 30-year man with Grumman, died December 16. He was 53, and he lived at 28 Rusco St., Huntington.

Dan came to Grumman in the fall of 1941, just before Pearl Harbor, in Plant 1, where the Wildcat was in production. He worked on the F7F and the TBF Avenger, and in the fifties was Production program manager of the F11F Tiger. He was in the U.S. Army 1945-46.

For more than four years Culleton served as assistant sub-contract manager.He was Plant 2 manager from 1951 to 1960, and then Bethpage Production manager. In 1967 he took over the job of Ground Support and Spares management and became deputy to Vice President Tom Johnson in October of '69. Just the day before he died, he had received his 30-year pin.

He leaves his wife, Claire, and four children: Daniel, Donna, Gail, and Kevin. Also a brother and two sisters.

ESO offering discount tickets to opera

Opera fans are being offered discount tickets through Grumman Employees Service offices for a series to be presented at C.W. Post College in Brookville.

The first presentation, "Madame Butterfly," is scheduled for Saturday, January 22. Among the performers will be Merina Santini of the LaScala opera troupe, Leonore Lanzillotti of the Philadelphia Opera Company, and Eugenio Fernande, lead tenor of LaScala.

Coming up are "Tosca," on Saturday, March 18, and "Cavalleria Rusticana" and "Pagliacci," a double-bill on Saturday, April 8.

Tickets are normally priced at $12.50 and $10—with discount they are $10 and $8. Post College is located on Northern Boulevard in Brookville. All performances start at 8 p.m., to the accompaniment of a 32-piece orchestra. There is plenty of free parking.

Journal: F-14 'vastly superior'

(Continued from page 4)

aircraft . . . If R&D costs of $1.4 billion, support costs — maintenance and training equipment — of $634-million, and spare parts costs of $832-million are added, the program unit cost of the 710 F-14s rises to $11.6-million.

"But between the 31 March and the 30 June 1971 SAR (Selected Acquisition Report), a SecDef (Secretary of Defense) decision was made to reduce the buy from 710 to 301. The rationale was to reduce the total outlay from $8.4 billion to $5.2 billion, with the option to build more than 301 F-14s if the Soviet threat . . . continued. The problem that rattled a vigilant Congress' cage was that, although total program cost **dropped** 38 percent, unit cost **jumped** 43 percent.

Cost comparison

"The flyaway unit cost of 301 F-14s averages $9.4 million, up a modest 20 percent from $7.8 million for 710, but when the constant R&D $1.4 billion and the near-constant support and spare parts costs were added in and divided by 301 aircraft, the alarming figure of $16.6 million program unit cost became apparent."

Nihart insists that a better way of judging cost "would be to compare the costs of the first 301 F-4s with the first 301 F-14s. In today's dollars, the actual flyaway costs of the first 301 F-4s average $6 million each, or only 36 percent less than the first 301 F-14s, which average $9.4 million each. Both a fighter pilot and a cost-effectiveness analyst might question whether a 36 percent saving offsets the greatly inferior performance of even today's F-4J, compared to the F-14."

To be considered, too, are the business outlook at the time the F-14 contract was signed, and the rate of inflation since that time. "When preparing its bid, Grumman had planned on $1 billion of business a year," says Nihart. But that business base decreased to $700 million per year. And while that was occurring, inflation doubled to six percent per year; and that caused a reduction in the work force.

"Taking a philosophical view of the Congressional critics of the F-14 program, Rear Adm. Leonard A. Snead, program manager, said, 'It's not bad to have critics sniping at you—otherwise we might get sloppy.'

"Most naval aviators would agree that, in 41 years of building naval aircraft," Nihart said, "Grumman has built few, if any, sloppy ones."

Jenkins snaps Nite Owl pin records with glittering 267-661

Ernie Jenkins started celebrating the holidays a little early in a recent session of the Bethpage Nite Owl circuit, and in the process gave the Plane News sports editor the bird while walking off with two individual records. In an editorial aside a couple of issues ago, we commented that one of the Owl sessions "was surprisingly lacking in outstanding efforts." Ernie promptly responded by chucking a hefty 267, added a 216, and finished with a sparkling 661—good enough to set game and series marks in the loop. (Could another nag put Ernie over the 700 mark? Well, let's try!) C'mon Ernie, think you're gonna rest on your laurels?

Other Owl standouts included Rudy Dunkley, 244-600; Judge Locke, 223-214-597; Marty Susa, 221; and Bill Schramm, 223. Susa and Schramm helped the Bombers explode for a big game mark of 808. . . . Sal Sclafani fired 214-586 then came back with 204-202-588 to edge Charlie Gosline for Trader scoring laurels. Charlie hit 211-200-582 and 579. Other bright spots: Whitey Bodnarchuk, 560, and Bill Wright, 556. . . . Sandy Rider is holding her average in the high 160s—she had 531, 521, and 566 in recent rounds—while keeping the Deciders near the top of the Blue Mixed league. Lou Ricci's 205-516 and 555, John Burckley's 513, Pat Roth's 453, Lee Badalementi's 467, Marie Mascali's 455, Rose Canales' 460, and Kathy Hager's 466 were other high marks.

Dudonis streaks

You could call Bob Dudonis' recent tear in the Classified circuit impressive: all he did was reel off strings of 219-209-623, 201-216-235 and 652; and 226-201-614. Along the way he collected high series, and didn't feel too badly about missing high game. He holds that one already with a 246 earlier this season. Somewhat upstaged by that burst were Ted Rydzewski, 204-234-614; Vin Trabona, 200-224-597; Jerry Samborsky, 216-206-613; Dick Farrell, 224-593; Mike Mustapich, 217-581; and Farly Lockhart, 217-595. . . . Black league luminaries included Joe Quigley, 221-233-614; Ed Burlingame, 213-230-607; and Andy Farrell, 218-595. . . . Hellcat highlights were Ed Raab's 206-591; Bob Moorhead's 237-581; and Ken Camidge's 216-562.

Brouillard leads Masters

Hot shots in the Masters loop threw some "near-misses" at Fred Skirde's 841 league mark recently, the closest being an 834 by Jake Brouillard. Jake hit that total with help from 236, 212, and 209. Among the other high rollers were Ray Zeller, 203-203-204-805; Skirde, 216-211-792; Jack Nielsen, 229-799; Phil Piacentini, 235-789. . . . Mixed keglers in the Hawkeye loop watched the high-game competition for men get heated up over the past month as first Tony Klobukowski hit 246 to tie Phil Barton's record, then Chet Everoski swung into that circle, too. Arlene Schwemmer shattered the women's series record with 540, while other top efforts were Frank Curcio's 577, Eileen Aloise's 510, George Moritz' 625, Edna Jezewski's 501, Vince Crevoiserat's 225-603 and 211-610, and Walt Stehlin's 220-579.

Nick Corvelli stayed just ahead of Nick Malandro and Ted Lohse in Classic action as he put together lines of 226, 206, and 203 to close at 635. Malandro, who totaled 627, had 204, 210, and 213, while Lohse used 203 and 225 games to amass 618. . . . In the Aerospace loop, Ed Lomot, who shares with Tom O'Connor the league mark of 609, hit 211-605 recently to head the play there, with Joe Aquilino's 204-581, Frank Apa's 204-581, and O'Connor's 564 among the bright spots. . . . Headliners in Rocket results were Tom Reilly, 214-571; John Cortese, 201-560; Ira Samberg, 232; and Dennie Gensinger, 203-552.

Ernie Jenkins
Cracks Owl marks with 267-661

It took awhile for news of Ken Camidge's record-busting night in the Woodbury Mixed league to reach Plane News—he accomplished the sweep before Thanksgiving—but nevertheless Ken does hold both men's marks after his 248-635. Others in that play were Norm Youngs, 220-556; Roger Doughty, 547; and Donna Lawrow, 500. . . . Pete Sciarabba hit 233-600 to spark the B. R. Kickers to a 1657 scratch game record in Structural Test competition, in a session marked also by Harvey Nelson's 207-539, Barry Bell's 538, and Fred Zimmerman's 530.

Sutton Red star

Rounding out the play in GAA-sanctioned pin leagues, Ray Sutton cashed in 224 and 242 to reach 619—high in the Red league, to outdistance Ted Martines, 233-571; Wes Johnson, 215-566; George Eyring, 225-575; and Milt Guttenberger, 209-565. . . . Bob Geer's 214-588 paced recent Patchogue Mixed action but it stopped one stick shy of Ken Becker's season mark, while other high flyers were Norma Landin, 223-537; Joan Burgess, 202-555; Lois Haas, 527; Gene Burgess, 229-576; Dick Lindstrom, 202-565; Harry Martinucci, 215-551; and Maggie Gaynor, 510. (Where are you, David? And you too, George!). . . . Arnie Alvar punched out 208-592, and in a recent session Bob Cozzette hit 211-566 to pace Century Mixed results. Other top efforts were Marilyn Cozzette's 218-512, and 505, Nancy Gentzlinger's 500; Mark Guss' 549; Bill Gentzlinger's 221-536; Bill Kallansrude's 202-563, and Walt Bruckert's 204-557.

Grumman team ready for play in L. I. Industrial hoop league

How well the Grumman varsity can impersonate the N.Y. Knicks could very likely determine how successful it will be in the L.I. Industrial Basketball League this season.

Sound somewhat presumptuous? Maybe, but the way manager Jim Dimitry sees it, the team has to pattern its style of play after the Knicks for, like the Knicks, the varsity doesn't have that one big man to build an offense around, and, because of that (as demonstrated by the Knicks), team play on offense and a tenacious defense are the key ingredients for a successful season.

Grumman was scheduled to play Lutheran H.S. faculty last night in the opening game of the L.I. league; in all, the varsity will play a total of 10 games against LILCO A, LILCO B, Nassau Police, Republic, and Lutheran. The next two opponents on the varsity schedule are Republic, January 20, starting at 7 p.m. at the Bower School in Lindenhurst, and Nassau Police, starting at 8 p.m. at Roslyn H.S.

Dick Mroz, at 6 foot 6 inches, is the tallest members of the squad but John Ebron, although only 6 foot 2 inches, will play center because he's a "leaper and a half," according to Dimitry.

The full squad includes Jim Cruthers, Frank Quarto, Walt Gleich, Ed Krol, Bill Rathje, Ron Bartlett, Stan Mazur, Bob Hembrecht, Bill Diercks, Lee Gendron, and John Bell.

Krol clicks

The Newcomers crushed the Druids, 93-65, while rolling to their fifth straight victory in the Tuesday afterhours loop. Ed Krol clicked for 32 points to lead the winner's attack, with Doug Keuling and Lee Gendron adding 17 and 14, respectively.

High for the Druids was John Ebron; he collected 23 points, with Bruce Driver netting 19.

Earlier, Frank Quarto teamed with Krol to score 49 points as the Newcomers edged the Hustlers, 81-74, Quarto was high for the game with 26, Krol had 23, and Bob Hambrecht of the Hustlers also had 23 points.

In the Wednesday league, Norm Horowitz finished with 13 points to lead the Tomcats' 55-45 win over Propulsion. It was the third straight for the 'Cats, as Don Callahan and John Bailey both contributed 12 points, and Joe Schaefer, who directed the Tomcat offense, added eight.

Bowling rolloffs start Jan. 15; GAA announces first ski trip

If you happen to be in the vicinty of Mid Isle Lanes in Hempstead this Saturday afternoon, stop in and see the varsity roll-off action scheduled to get underway at 5 p.m. More than 70 of the top-average bowlers in the Company will be on hand for the opener. The big prize: berths on the team representing Grumman later this year in the L.I. Industrial Bowling Tournament.

This year, members of the championship Nite Owl Industrial team will be rolling with the day crew. That should strengthen Grumman's entry in the tourney. Ernie Jenkins and Rudy Dunkley, who are two of the Owl keglers entered, share high starting-average with Fred Skirde of the Masters league. Frank Tucholski, 186, Ben Plawski and Herb Mahoney, 185, and George Fowler 184, are among the other entrants.

Action continues on Saturday, January 22, at Mid Isle, at 5 p.m.

Sign-up time

If you're a beginner on the slopes, or if you're more experienced and want to get a party together, the Grumman Athletic Association may have just what you're looking for—a week-end ski trip to Manchester, New Hampshire, February 4-6.

Accommodations at the Sheraton Wayfarer are for 4-5 persons per room, $49.75 each; three per room, $52.75 apiece; and two per room, $59.75 each. (Taxes and gratuities are included.) Rental of skis and buckle boots is available at $5 extra.

Included in the reservation fee are a snack on arrival Friday night, breakfast and dinner on Saturday and Sunday, and, on the apres-ski scene, a wine and fondue get-together Saturday evening. Two-hour ski instructions, beginner through intermediate, are provided both days.

If it sounds inviting, better hurry to confirm your reservation by plunking down a check (made out to GAA) with Chet Baumgartner at Plant 28B. There is room for 80 on the trip, and the deluxe motor coach takes off for the ski area about 5:30 p.m. on Friday, February 4, from the Plant 3 parking field.

Want more information? Call Chet on Ext. 2133 or 2269.

Tall tales

Everything's big in Texas, even the bowling scores. Competing in the Friendship League in Houston, Dick Nelson fired a 278-707—the second 700 series recorded by a Grummanite this season. Tom Izzo totaled 214-592, and Larry Langan finished with 200-567.

And that hot streak spilled over onto the fairway, too. Lee Peka dropped an eagle-3 at the Sun Meadow Country Club.

Hank Womble
Hot hand ties rifle record

Womble's 198 ties rifle mark

Hank Womble tied a six-year-old scoring record in the L.I. Industrial rifle loop while leading the Grumman Gophers to their third straight triumph recently. Hank's sparkling 198 in the .22 caliber fire equalled team mate Rein Rand's 1965 league mark and paced the Gophers to a 762-737 win over Brookhaven. Contributing to that score were Bob Mansbart, 194, Warren Block, 187, and Ed Brandis, 183.

Later, the Gophers made it four-in-a-row by downing Republic 773-681. Womble neared his league record in that one, hitting 196 to lead the Grumman squad, while George Hilton fired 195, Mansbart, 193, and Brandis, 189.

B team leader in pistol action

The Grumman B pistol squad ran its record to 4-1 in the L.I. Industrial league with a 968-893 win over the Grumman E team. Ray Nordmark's 256 paced the winners in the .22 caliber competition, and he got help from Hal Saltzman's 251, Mort Weinberg's 238, and Bill Boyce's 223. Tom Tavitian led the Es with 238.

In another match in the sharpshooter division of the Industrial loop, Mike Baumgarten fired 271 to lead the Grumman C team to a victory over Indian Head. Other C scores were Bill Rommell, 243, Charles Boppe, 241, Tom Lovatt, 225.

After a recent 1021-1079 loss to Pan Am, the Grumman D squad showed no better than a 2-2 record in the L.I. Industrial league's expert division. Al Berka's 274 led that action, with Art McKee's 264, Dick Bauer's 244, and Greg Criscione's 239 counting toward the D total.

Wicks high scorer

Earlier, Rick Wicks was on target in the expert division as he scored 280 to pace the Grumman P's 1085-1045 victory over Grumman A. Phil Boehm's 269, Hank Chau's 269, and Ron Trenker's 267 aided that win. John Crawford and Dave Rice, with 271 and 268 respectively, led the losers.

In a 1068-1108 loss to Sperry, Al Berka's 277, Joe Oliveri's 272, and Art McKee's 271 were high for Grumman D. Another standout, Baumgarten, hit 271 to spark Grumman C's 1031-939 win over Grumman B.

King, Campo rulers of Plant 16 shuffleboard

Jim King and Lou Campo routed John Pawlitz and George Maune 54-21 in the first game of their two-out-of-three final set for the deck shuffleboard championship of Plant 16 recently, and then had to hang on in the last tilt for a 57-56 win to sew up the title.

King and Campo lost but one game, that one a 45-51 decision to Joe Nardi and Al Barry, while bowling (or is it shuffling?) over Fred Roth and Stan Dannenberg, 50-43, 63-38; Nardi and Barry, 45-51, 53-27, 51-48; and, in the finals of the winners' bracket, Pawlitz and Maune, 53-43, 62-18.

It was the last chance for John Pawlitz to take the Plant 16 crown—he has since retired. But what the hell, John, why not come out of retirement, at least for a couple of weeks, to have a go at the crown next year?

at your SERVICE

This is a free service to Grumman personnel for non-commercial advertisements, accepted on a first-come, first-served basis. Classified advertisements are carried in PLANE NEWS only on the basis that everyone replying to such advertising will receive fair and equal consideration regardless of their race, creed, color, or national origin.
Type or print ad on form available at Employees Service and Engineering counters, and send via interplant mail to PLANE NEWS, Plant 5, Bethpage. List home phone (with area code if outside Nassau or Suffolk). Limit: one ad per person per issue. No item under $10, no firearms or ammunition.

Wanted

APT.: 1 bdrm. unfurn., bet. Huntington & Hauppauge, for work. couple. 423-0974.

PORT. ORGAN: Elec., pref. 5 octave keyboard, min. 4 octaves, pref. Farfisa, Gibson or Panther. 724-3808.

ANTENNA ROTOR: reason. 757-2046.

HELP: Bldg. a midget rac. airplane. 266-3037.

PARTS: For Chevy, '55 to '57 body need., posi rear 4:56 or 4:88 ratio pref., clutch link., E.T. bars, headers, etc. Jim Cush, Ext. 1223.

VW: '64 for parts, reason. JU 6-6471.

SHOP MANUAL: '67 Ford for 289 eng. Lou Carpinone, Ext. 2927.

HOUSE: For retirement, ranch or cape, 2 bdrm. (min.) lower lvl., nr. RR, shop., moderate cost, Bethpage, Hicksville Or Farmingdale. 822-3619.

CORVAIR: '65 or new., for parts, will tow if required. WA 2-5398.

SAX: Tenor, gd. cond. MI 3-7651, after 4:30.

PIANO: Suit. for yg. begin. 584-7597.

APT.: Furn., kit., bath, lrg. studio or 2 rm., bef. 1/14, reason., for gent. 931-2567.

SHOP MANUAL: Owner's for '65 Saab, 2 cycle-96. 364-1883.

SHOP MANUAL: For '63 Chevy. 724-1958.

SCHEMATIC: For Knight kit walkie talkie mod. C-555; metal lathe, 6 in. throw; 3.5 or 4 hp Tecumseh eng. PY 8-4258.

SHOP MANUAL: For '66 Olds. 757-4791.

APT.: 3 rm., 10 mi. radius of Bethpage, for yg. couple, bet. $150-180. 212 VI 3-2757.

TBL. SAW: Radial arm or tilt arbor. AN 5-4085.

ROOMMATE: To share house w/2 bachelors, pvt. bdrm. & bath, appli., util. pd. by landlord. 293-8347.

WHL.: 13 in. for '67 Opel Kadett. SU 5-5331.

ENG.: Mod. airplane, ignition type, used or new, for antique eng. collection. MA 6-2825.

WHL. CHR.: For 7 yr. old child. 681-8466.

Lost

WED. BAND: Man's wide, gold, plain, inscript. dtd 11/4/61. ED 4-8815.

For Rent

ROOM: Furn., sgl. or dbl., references. JU 8-6106.

ROOM: 2 mi. plant, pvt. ent., bath. PY 6-4210.

HOUSE: Shoreham, N. Y., 2 bdrm., furn., nr. Calverton, $200/mo. 271-9405, evgs.

HOUSE: Wading River, 3 bdrm. unfurn., gar., $250/mo. 212 728-7488, bef. 10 a.m.

ROOM: Glen Cove, furn., lndry. & kit. priv. avail., pvt. bath, gent. prefer., $100/mo. 671-4083.

APT.: Central Islip, 2nd fl. pvt. home, conven. 234-1715.

ROOM: N. Massapequa, desk & linens suppl., sep. heat zone, 4 mi. Grumman, nr. shops & service, gent. pref. MY 4-5814.

HOUSE: Long Bch., 1 blk. bch., yr. round rent., 3 bdrm., 2 bath., din. rm., w-w, nr. Meadowbrook Pkwy., $325/mo. PY 6-0197.

ROOM: E. Meadow area, furn., sgl. or dbl., gar. avail. PE 1-3703.

APT.: Bethpage, 4½ rm., ½ mi. town & pits., $175/mo., security. WE 5-0885, after 6.

SKI LODGE: Nr. Stratton, kit., 4 bdrm., 2 bath, firepl., wash., color TV, avail. wkdays. PY 8-3879.

SKI CABIN: S. Vermont, 15 min. Mt. Snow, ½ hr. from Stratton, Bromley, slps. 7, firepl. 261-1570.

SKI LODGE: Berkshire, 1 mi. Catamount, 4 bdrm., 2 bath, wkend. & wkly. rates avail. Eugene Baird, Ext. 3997.

SKI LODGE: Stratton/Bromley/Magic, Sun. nite thru Thurs. nite, $100. 212 428-4804.

SKI TOWN HOUSE: Coed, Hunter Mt., ½ block from bowl, ½ share, 10 wkends. 212 563-0151.

APT.: Royal Palm Bch. Colony, W. Palm Bch., Fla., compl. furn., 1 bdrm., 1½ bath, scr. patio, swim., tennis & free grn. fees for 18 hole course, $200/wk., $100/wk. May-Oct., avail. Mar. & Apr. for 2 wks. or mo. periods.. no child. or pets. MY 2-7134.

STUDIO APT.: Freeport on the water. 223-0156.

APT.: Bethpage, 2 bdrm., kit., l. room, bath, $265/mo. incl. all util. 269-9381.

HOUSE: A-frame, 6 bdrm., slps. 12-14, Hunter Mt. ski area, comp. furn., club accept., rent. fee negot., now til Apr. 1. 212 LA 4-7696.

CALENDAR of events

Notice of events for period Jan. 28 - Feb. 11 should reach Plane News by Tues., Jan. 18.

Am. Radio Club: Wed., Jan. 19, 5 p.m., WA2LQO shack on roof of Plt. 5, bus. & oper. E. Goodman, Ext. 3651.

Coin Club: Every Wed., 12:05 p.m., Plt. 25 Vendor Conf. Rm. Ken Hale, Ext. 3395.

Chess Club: Tues., 5 p.m., Plt. 3 Cafe, tournament, games. Alex Ikonnikow, Ext. 7592.

Duplicate Bridge Club: Every Thurs., 5:45 p.m., Plt. 3 Cafe. S. Stone, Ext. 3652.

Ex-Servicemen's Club: Wed., Feb. 2, 7:30 p.m., Plt. 28 Audit., reg. mo. mtg. Vets serv. avail., Thurs., Feb. 10, Ext. 2814. Al Kordula, Ext. 87259.

Fenc. Club: Mon. & Wed., 4:30 p.m., Plt. 30 Cafe, competiitve fenc. & instruc. Joe Campisi, Ext. 87587.

Fly. Club: Fri., Jan. 14, 5 p.m., Plt. 28 Audit., reg. mtg. Stan Kalemaris, Ext. 7341.

L.I. Ind. Nurses Assoc.: Thurs., Jan. 20, Plant 28 Audit., mo. mtg., spkr. Allen Scimeca, Nassau County Med. Ctr. Lab. Mary Gise, Ext. 3723.

Old Friends Club: Tues., Jan. 25, 7:30 p.m., Hearthstone Inn, F'dale, Rte. 109, 1st mo. mtg. '72. Frank Mistretta, Ext. 2683.

Retiree Club: Wed., Jan. 26, 1:30 p.m., Holiday Manor, reg. mo. mtg. GAA, Ext. 2133.

Ski Club: Wed., Jan. 19, 8 p.m., Holiday Manor, Hicksville Rd., Bethpage. Bill Flynn, Ext. 1823.

Soc. of Logistics Engrs.: Thurs., Jan. 20, 5:45 p.m., Old Country Manor, 244 Old Country Rd., Hicksvillel, L.I. Chap., cocktaill/dinner mtg., spkr. Lawrence Lerner, pres. of Saphier, Lerner & Schindler, Environetics Div., Litton Ind., on "Offshore Jetport for N.Y.C." Jack Beiderman, Ext. 2091.

Soccer Club: Sun., Jan. 16, 2:30 p.m., Premier team vs Patchogue @ Patchogue; Jan. 23, 12:30 p.m., Reserve team vs Lindenhurst @ Grumman, 2:30 p.m., Premier team vs Rocklyn @ Grumman. Karl Herrnkind, Ext. 3470.

Stamp Club (Bethpage): First 3 Wed. of ea. mo., 5 p.m., Plt. 30 Cafe, swap, circuit bks., sales, auctions, discussions. Marty Harow, Ext. 9171.

Key changes in withholding law

The Revenue Act of 1971 has made important changes in the Federal Income Tax withholding system. Starting in 1972, you may be entitled to claim a "special Withholding Allowance," and additional withholding allowances based on your estimated deductions. Withholding taxes may increase for some, however, even though new allowances are claimed.

The W4-a Exemption Procedure has been eliminated as such and has been incorporated in the new withholding allowance computation.

A new Employees Withholding Exemption Certificate (W-4 card form) and separate instruction sheet, as well as new Federal Withholding Tax Tables (applicable to deductions after January 15, 1972), will be distributed to all employees as quickly as these forms are printed and received at Grumman. If you wish to change your exemptions, complete the new W-4 card in accordance with the instructions when you receive it. **These new instructions do not apply to your Federal tax return for 1971, which has to be filed no later than April 17, 1972.**

Grummanites are advised to study the material furnished, and if necessary, seek tax counsel. Please recognize that the Company cannot furnish advice in this essentially personal matter between a tax paying employee and the Internal Revenue Service.

For Adoption

FEM. DOG: Mix. breed, Chesapeake retriever & short hair, pointer, part. train., 2½ yr., gd. duck dog. 727-6441.

RABBITS: Spec. Orlando, 8 blk. & wh. baby, just weaned. 271-7422.

DOGS: Fem. Schnauzer, AKC, 2 yr., gentle; fem. Siberian husky, AKC, 2 yr., gentle. WE 1-2339.

KITTENS: Part Persian, fem., 8 wks. PE 1-3568.

Ride Wanted

BOHEMIA: Or Sayville, Oakdale, Ronkonkoma, to Plt. 25. LT 9-3849.

E. PATCHOGUE: To Plt. 3, 7:30-4 a.m. 289-4431.

N. BELLMORE: Via Bellmore Rd. to 34 complex. CA 1-4063, after 5 p.m.

BALDWIN: Oakmere Drive to Plt. 2, days. BA 3-0910.

LONG BCH.: To Plt. 2. GE 2-3311.

Car Pool

BKLYN.: Belt Pkwy. to Plt. 30, 8:30-5 p.m. CL 6-0413.

BRONX: Queens to Calverton. 212 298-0668, after 7 p.m.

For Sale

VW: '71, AM/FM, new snows, orig. owner, $1,600. 796-2294.

PONTIAC: '68 Catalina, 4-dr. sed., R&H, auto., $1,275. WE 8-7608, evgs.

COUGAR: '67, 390, 4-spd. XR 7, GT, grn., sandalwood lea. int., pwr. steer. & disc bks., air cond., AM/FM, $1,600. 226-9276, evgs.

TRIUMPH: '69 TR-6, blue ext. & int., Michelin tires, AM/FM, $1,800. 799-5393.

PORSCHE: '66, 911, $2,300. 475-6088.

HONDA: '66, 350cc, low mi., 2 new carbs, xtras incl., $300. 587-8617.

HOUSE: Pt. Jefferson vill., 3 bdrm. cust. col. cape, 1/3 wood. acre, liv. rm. w/fieldstone firepl., formal din. rm., eat-in-kit., deluxe dishwash., scrn. porch, full bsmt., s-s, w-w, 220v/100 amp, sep. ohw heat., xtras, $39,900. HR 3-3232.

DINETTE SET: Blk. steel, 36x48x60 formica tp. tbl., 4 chrs., $30. CH 9-9231.

TV: 19 in. color, Sears, blond cons., $150. 293-5403.

MISC.: King sz. hdbd., silver-gray, $25; king sz. bdsprd. & 2 pr. match. lavender drapes, $40; king sz. bdsprd. & 4 pr. match. floral patt. drapes, blue/lavender/green, $70. WE 1-8258.

GUITAR: Steel strings, $10. OR 1-2957.

MISC.: 4 ft. bamboo bar & formica tp./cutting board & drawer, $65. 727-8534.

ATTACHE CASE: Brown naugahyde, never used, $15. MO 9-9020.

BOWL BALL: Blk., Ebonite, 16 lbs., $10. 731-4609.

VW: '64, $500. 333-8964.

STA. WAG.: '62 Falcon, 170 ci, 6 cyl., std., 6,000 mi. on o'haul eng., 4 new 735x15 tires. 878-2169, after 5 p.m.

BUICK: '67 Skylark, GS-400, aqua, blk. vinyl tp., 4-spd. manual, ask. $1,500. 325-0066.

OBITUARIES

Plane News has received word that death has come to the Grumman personnel listed below. We extend sincere sympathy to relatives and friends.

DANIEL J. WINN of Maintenance Repair, Plant 37, died on December 26 at the age of 58. He had been with Grumman for 24 years and had lived at 174 East 17th Street, Huntington Station, N. Y.

CHARLES L. MARTENS of Plant 3 Machine Shop died January 10 at the age of 56. He had been with Grumman 27 years and his home was at 26 Spruce Tree Lane, South Huntington.

MARTHA F. ARMOUR of Purchasing, Plant 30, died January 10 at the age of 54. She had been with the Company since 1958 and lived at 198 Meader Avenue, Merrick.

For Sale

PLYMOUTH: '69 Valiant, 6 cyl., 4-dr., auto., radio, $1,075. AN 5-6825, after 4:30 p.m.

AUTO PARTS: 2 Goodyear poly belt. snows, H70-15 w/studs, w-w or raised ltrs.; tan bkt. seats from '67 Corvette. 757-3795, after 6 p.m.

HOUSE: Huntington Dist. 3, 3 lrg. bdrm., 2 full bath, lrg. liv. rm. w/firepl., din. rm., eat-in-kit., xtra lrg. playrm., gar., ¾ acre, brick terraces, lndscpd., w-w, s-s, 18 yr. 271-4378.

HOUSE: New Hyde Park, 3 bdrm. stone cape, 2 bath, fin. bsmt. w/kit., gar., patio, nr. sch., churches & transp., 50x100, poss. mother/daugh. PR 5-3243.

PROPERTY: 18 acres, Catskill Mts., nr. Pepacton Reservoir, 650 ft. front on country rd., $14,500. BA 3-1247.

DINETTE SET: All formica tbl., 4 chrs., $40. 724-2671.

GOLD. RETRIEVER: Fem., 11 mo., AKC, obed. & gd. w/child., $125. 694-0099.

PUPPIES: Irish setter, AKC reg. 727-1194.

BOAT: 21 ft Luhrs Sea Skiff, 60 hp Gray, rebilt. 1 yr., bilge pump, fire ext., anchor, line, lgts., $650. LT 9-3145.

PROJ.: Manual ctrl., Mansfield Skylark, mod. 300, $15. 223-1064.

SKI BOOTS: Henke Holiday bkle. boots, lady's sz. 7½ med., used 2 seasons, ask. $25.. 427-1229, after 5 p.m.

CLAM GARVEY: 16 ft., new. LT 9-2701, after 5 p.m.

BARRACUDA: '70 Gran Coupe, air cond., AM/FM stereo, cons., w/w, cust. int., std., 318 eng. snows, $2,000. John Cattonar, Ext. 1740.

CUTLASS: '70, 4-dr. sed., 20,000 mi., air cond., $2.490. 261-1186.

SAILBOAT: Pearson Cmdr. sloop rig, 3 sails, 6 hp outbd., slps. 4, fully equip., $5,600. 261-1186.

WASH. MACH.: 4 lb. cap. port., 3 cycle, quiet, w/ attach., 2 yr., $80. Bob Gerardi, Ext. 86141.

TKTS.: 2 for Sat. evg., 3/18, La Traviata opera at Lincoln Ctr., orch. seats, row K, $15.90/pr. 212 423-4097.

HOUSE: Massachusetts, Berkshires, lrg. 8 bdrm., 2½ acres w/lrg. carr. house, ideal for ski lodge. 293-6716.

MISC.: Bal. of subscription to Jack La Lanne Health Spa, 1 yr./50 visit plan, reason. 226-5256.

PONTIAC: '65 Bonneville conv. full pwr., new tires, $500. 587-8432, after 5 p.m.

VW: '65 Bug, R&H, $600. MO 1-0142, after 5 p.m.

MOTORCYCLE: '71 BSA Lightning, 650cc, 5 mos., 700 mi., $1,300. WE 5-7497.

HOUSE: Commack, 3 bdrm. ranch, fin. bsmt., appli., w-w, pool, fence, att. gar., walk stores & sch., $30,990. 864-7214.

SEW. MACH.: Westinghouse, w/cab., $25. LI 1-2015.

WASH. MACH.: Sears Kenmore, tp. mod., used 5 mo., $100. 667-0219.

MISC.: White Edison crib, matt., & bumpers, $35; fold. hi-chr.; booster; navy blue Biltrite winter carr. w/matt. & shield, conv. to car bed, $35. 368-1819.

MISC.: Honeywell #600 elect. flash, $50. 379-1486.

SKIS: 4 ft. 6 in. step in, release bind. & poles; hockey skates, sz. 1 & 12, child. AN 1-3624.

STRESS BK.: Analysis & Design of Flt. Vehicle Structures by E. F. Bruhn, $10. 264-7112.

HAM EQUIP.: Comp. 6 meter sta., Clegg 99 transceiver, UFO, mike, SWR indicator, 6m low pass filt., 3 el beam, AR 10-D ant. rotor. & crystals, $130. 928-1422.

HAM GEAR: R4A, T4X & AC supply, $475; TR3 transceiver w/DC supply, $325; Nat'l. NCL 2000 linear 2KW, $350. 669-6365.

AMA. RADIO ANT.: Hy-gain HV-18, 10-80 meter vert., $10. 751-1256.

PWR. HOUSE: Elec. saw, 6¼ in., 2 xtra blades, $12. MO 5-7904.

TBL. SAW: 8 in. Craftsman, tilt. arbor, ½ hp, 2 ext., xtras, $80. PE 5-6168.

MISC.: Wood. outer dr. w/scrn. dr., used 1 season, $50; 2, 37x27 casement wind. w/scrns.; clear embossed auto slip cov., never used, $10. 231-8442, after 6 p.m., Tues., Thurs., Fri.

WASH.: Apt. sz. Hoover port. spin/dry., stain. steel tub, $125. 226-7021, after 5 p.m.

DISHWASH.: G.E. JU 8-5457.

ENCYCLOPEDIAS: '72 edit. World Bk., $175. Neil Marcus, Ext. 7678.

CASES: Salesman's sample/catalog, brown, 12 ¾x 19x7½ in., $12.50. 724-7484.

TENOR SAX: & case, Martin, $150; Buffet clarinet & case, $125. 249-9782.

For Sale

M&B GT: '70, blue, wire whls., o'drive, AM/FM, $2,250. 585-1849.

CAMERA EQUIP.: Minolta autocord 2¼x2¼ T.L.R., telephoto & 2 close up lenses, filt., lens shade, $50. 234-6378.

MOVIE PROJ.: Bell & Howell super 8, autoloader, $50. YA 4-6567, after 4:30.

MISC.: 29 gal. & 10 gal. fish tanks, std., pump, comp set-up, $45; over 500 first day cov. stamps, from '39-'70, $125. 724-0409.

MISC.: Artificial tree, 7 ft. Scotch pine; lgts.; 6 dz. lrg. gold Christmas tree balls, & other decorations. RO 4-7499.

CATAMARAN: 9 ft., 7x4 wood deck, fbgl. hull, rig. & sail intact, $175. 888-5446, after 5 p.m.

ARBOR PRESS: Bench type, Dake mod. O, 8 in. max., $30. 744-6903.

PLYMOUTH: '64 Valiant V-200, auto., $400. LI 1-3381.

POLARA: '68 Dodge, 383 c.i., auto., pwr. steer. & bks., air cond., equip. for trlr. tow., w/equal. hitch, $1,100. JU 1-5981, after 6:30.

CHEVROLET: '66 Impala conv., 283 c.i., V-8, auto., pwr. steer., new tires & many parts, gl. rear wind., 37,000 mi., $900. FO 8-5722.

CHEVROLET: '66 Impala, 2-dr. hdtp., gold, 57,000 mi., 8 cyl., auto., pwr. steer., 2 new snows, hvy. dty. shocks, bkt. seats, new 2-bbl. carb., ask. $1,250. 289-3750.

CHEVROLET: '62 Impala, 4-dr. sed., 6 cyl. auto., R&H, $220. PE 5-2199.

VW: '66, 30,000 orig. miles, orig. owner, $600. 212 427-2735, evgs.

AUSTIN HEALEY: '65, 3000 Mark 3 conv., new tires. trans., muffl., start., rugs., & tp., $1,800. GR 5-9369, after 5:30.

ENG.: '65 VW, 40 hp, comp. rebit. & install., $160; '66, 1300, 50 hp eng., all new parts, $190. 273-7509.

GTO: '70, blk., 455 c.i., air cond., 4-spd., tape deck, chrome whls., exh. mod., $2,400. LI 1-5266.

MOTORCYCLE: '71 Montesa, 250 Capra Motocross, 34 hp, 190 lbs., raced twice, $850. 665-3164, after 4:30.

HOUSE: Brentwood, Loretta Pk. sect., new, 4 bdrm. hi-ranch, fam. eat-in kit., for. din. rm., & liv. rm., 1½ bath, fin. rec. rm., 2 car gar., util. rm., cov. patio, 240 sq. ft. raised sundeck, fenc. & lndscpd., 24 ft. dia. above grnd. pool., panel. & carpet., s-s, appli., xtras, walk. shop. & sch., $31,500. 273-6064, evgs.

HOUSE: N. Babylon, 6 rm., 3 bdrm., oil hot water, s-s, w-w, full bsmt. & attic, appli., pool, att. gar., $28,000. 667-0219.

HOUSE: Dix Hills, sch. dist. 5, 4 bdrm. hi-ranch, blt. in pool, lrg. rec. rm. w/brick firepl., undergrnd. sprinkler sys., all appli., prof. lndscpd., xtas, $47,000. 667-9073.

HOUSE: Setauket, 3 bdrm. col., 2½ bath, panel. fam. rm., w-w, draperies, s-s, 1/3 wood. acre on cul-de-sac, xtras, $37,000. 751-9721.

HOUSE: Lindenhurst, 3 bdrm. ranch, xtra lrg. kit. & liv. rm., 3 bdrm., cyc. fenc. yd., split rail in front, nr. bay, ask. $25,500. 226-7603.

HOUSE: Massapequa/Nassau Shores, 3 bdrm., 60 ft. sprawl. ranch, 2 bath, cedar shakes, firepl., prof. lndscpd., sod lawn, 100x100, eat-in-kit., formal din. rm., cov. patio, undergrnd. sprinkler. 6 appli., 9 yr., nr. bay, gar., poss. take o'6% mtge., $49,800. 541-2076, after 5.

CHANDELIER: Antique brass, 6 branch, 60w ea., crystal pendants, $60. 223-1064.

STORM DR.: Alum. w/ screen, 36x80, $20. SU 1-5730.

TWIN BD.: Matt., box spring & metal frame, $30. AN 6-2997.

KIT/DIN. SET: Formica tp., 6 chrs., lgt. brown & gold, $45. 938-6140.

STEREO: G.E. port. phono, 3-spd., $30. SU 5-5331.

STEREO EQUIP.: Dyna PAS-3 pre-amp & ST-70 amp., prof. wired, $130. 751-1256.

TRANSCEIVER: Citizens Band, Lafayette mod. HB-115A, comp. w/crystals, 9 thru 14 & mike, $30. 921-8265.

FORD: '70 Galaxie, 4-dr. hdtp., fact. air, new tires, 20,000 orig. mi., bal. of 50,000 mi. warr., $2,395. 922-3114 after 6 p.m.

MERCEDES BENZ: '68 Diesel, 4-spd., std. 543-2941.

PLYMOUTH: '71 Roadrunner, AM/FM, 383-4-spd., mag whls., snows, alarm, 4,000 mi., $2,900. 628-1578.

For Sale

BUS.: '63 VW w/sunroof, '65 eng., $300. 757-7918, evgs.

FURY: '69, III, 2-dr., pwr. steer. & bks.. air cond., best offer. 212 733-8470.

VW: '65 Bug, $450. OR 1-3799.

VW: '66 red bug, radio, snows, $595. C. Coulter, Ext. 57-202.

OPEL KAD.: '68, 2-dr., red, rear spkr., radio, clock, tach, w/w, 41,000 mi., 4-spd. man. shift, 30mpg, $750. 473-1162, after 6 p.m.

WAGON: '63 Falcon, auto., R&H, snows, $325. HA 7-5969.

PONTIAC: '68 Firebird, 2-dr. hdtp., red, blk. lea. int., 8 cyl., 350 c.i., auto., air cond. pwr. steer. & bks., bkt. seats, cons., low mi., xtras, reason. 212 471-2025.

CHEVROLET: '65, std., Biscayne, 2-dr., $435. MO 9-1650.

ROOF RACK: For VW bug, streamline type, $20. 799-5945.

WAG.: '66 Chevrolet, air cond., pwr. steer. & bks., 327, pwr. wind., $750. 226-7408.

PARTS: '64 Datsun. 922-3063.

HOUSE: S. Farmingdale. 8½ rm. split, 3 bdrm., panel. rec. rm., lrg. eat-in-kit., 1½ bath, laundry rm., gar., o.h.w. 2 zone heat, w-w, in-grnd. pool, nr. sch. & shops, mid 40s. CH 9-6817.

MISC.: Bathrm. sink w/faucet, wh., 20 in. wide; med. cab. w/mirror dr., recessed type, both $15. MY 4-6022.

MISC.: Tbl. saw mtd. in TV cab., all attach., 2 xtra blades, $35; brass firepl. scrn., $15; HQ-129X receiver, $60; lawn mower, $20. 751-0691.

MISC.: 21 in. Homelite chain saw, $95; Gibson folk guitar, $75; grindstone, sit down type, $30. 588-7184.

TRANSCEIVER: C.B., Lafayette, Comstat 23 Mark V; mike, ant. & cables, $75. 265-8769.

GOLD. RETRIEVER: Fem., AKC appr'vd., house bkn., 9 mo., gd. w/child., $50. WE 1-6582.

PUPPIES: Dachshund, AKC, male, shots, $80-$100. MY 2-8174.

BOB. PINSCHERS: Champ blood lines, reds & blks., fem., show & pet qual., from $150. 889-2370.

DOG HOUSE: For lrg. dog, plywood ext., porch, fully insulated, 5x5, AKC specs, new, never outside, $75. 728-1930.

FLASH UNIT: For 35mm camera, Kakonet spec., transistorized, elec. rechargeable or batt. oper., latest features, new, $25. 293-8039.

CAMERA: Minolta Al-S, f1.8, 40mm, 1/500 sec., blt. in exp. meter, match needle oper., aux. wide angle & telephoto lenses, series VI, haze 2 filt., 1 roll of film. PY 8-4411, aftr 6 p.m.

BOAT: 28 ft. Robertson Sea Skiff, new Palmer 150 hp hyd., new shaft, prop., rudder, & two 30 gal. tanks, $2,500. JU 1-2740, bet. 6-8 p.m.

MISC.: 225 hp Gray Marine eng. w/copper risers for sgl. exh., rebit. last summer, new carbs., rings, & bear., $450. 665-0972.

MOTOR: '69, 40 hp Evinrude outbd. w/18 ft. boat, Anglomatis fbgl., $750, eng. only, $500. 883-2560.

SURFBD.: 7½ ft. Hobie tri-plane, $75. SU 5-5331.

HD. SKINS: Mod. 720, 208cm, new, no bind. have been mtd., $85. LI 1-8590.

SKI EQUIP.: Child's boots 12, 1.3,4,10,11; skis w/ bind., 46, 52, & 63 in., 1 sep. set of bind., 20% of new value. 928-2475.

SKI BOOTS: Lady's Kastinger, Aspen III, sz. 6, worn once, $35. PR 5-4265.

SKIS: Hart Holiday, metal, 210cm, blk. & Cubco bind., used 1 season, $65. 212 726-2347, after 8 p.m.

TRANSMITTING STA.: Ama., Heathkit 30w CW transm., Hy-gain vert. ant., key, & crystals, $35. 751-1256.

RECEIVER: National NC-183, w/speaker, $110. 928-1891, after 5:30.

EXER. CYCLE: 1 yr., sturdy w/tension ctrl. & spd. ometer, $50. 667-0128, after 6 p.m.

HO CAR SET: 25 yds, track, straights, terminals & curves, new spd. ctrl. & pwr. pak, $45. 368-2939.

CARR.: Comp. collapsible, conv. to car bd. w/access., $20. PE 5-5261.

MISC.: Coach carr., $15; birch crib, $10; hi-chr., $10; wrought iron desk & chr., $15; snow blower, $20. 587-0330.

GUITAR: Zim Gar, begin. w/nylon strings & soft case, $10. IV 6-2720.

MISC.: 14 in. Zenith B&W port. TV, $75; Regina elec. broom, $15; Phonola cons. cab. stereo, AM, FM, FM stereo & record player, $75. MO 6-6742.

For Sale

OLDSMOBILE: '68 Cutlass sta. wag., pwr. steer., & rear wind., new tires, 1 owner, $1,400. MO 1-3502.

BUICK: '62 Skylark, pwr. steer. & bks., 7 tires & 7 rims, ask. $275. 543-9220.

STA. WAG.: '69 VW Squareback, 18,000 mi., radio, roof rack, w/w, ask. $1,700. WE 5-1618.

DODGE: '69 Polara 4-dr. hdtp., pwr. steer. & bks., air cond., stereo tape, 23,000 mi., $1,595. LY 3-7077, after 6.

CADILLAC: '64, 4-dr. hdtp., sed. DeVille, new paint, beige, 4 new tires, $600 or best offer. 265-3463.

VW: '66 Bug, 35,000 mi. on 2nd eng. 628-1796, after 5.

BUICK: '68 Riviera GS, gold w/blk. vinyl tp., blk. int., bkt. seat, pwr. steer., bks., wind., & seats, AM/FM stereo radio & tape, air cond., posi rear. PE 5-5268.

PLYMOUTH: '68 Fury III, 2-dr., pwr. steer., bks., air cond., vinyl roof, $1,450. PE 1-7008.

COUNTRY SQUIRE: '68 Ford LTD, 10 pass. wag., 390, 37,000 mi., $1,850. 293-5403.

VW: '66 Squareback, sun roof, AM/FM, $995. 271-9097.

PLYMOUTH: '67 Valiant, 2-dr. sed., $700. 423-0347.

CHEVROLET: '63 Impala SS, pwr. steer., $350. 293-6236.

JEEP: '56 pickup, 4whl. drive, new transmission, reblt. eng., $250. WE 1-8648, after 7.

MOTORCYCLE: Honda, 160CB w/9,500 mi., spare eng. w/maint. manual. 538-1557, after 5.

MOTORCYCLE: '70 Kawasaki, 90cc, low mi., str./trail, new shocks, tires, sprockets, self inect. oil., $295. 731-3759.

PUPPIES: Basset hound, AKC reg., Huntington area. 549-8547.

PUPPIES: Poodle, AKC, blk. or brown. 473-3017, after 5.

STEREO: Cust. cab., 6 ft. sol. wal. w/rec., prof. turntbl., Collaro changer, Viking stereo record tape deck, 2 Brociner 30w ea. amp., Lafayette pre-amp, 2 sep. B302A spkr. sys. $550. PY 6-3185.

SKI EQUIP.: Henke buckle boots, 9½ narrow, $18; Cubco step-in safety bind., $12; 1 season/both. 271-1680.

SKI BOOTS: Nordica, 7½ med., leather, buckle, $30. 212 347-2090.

SKI BOOTS: Kastinger buckle, sz. 9, $20. 671-3381.

SKI BOOTS: Henke plastic, sz. 10m, $30. 368-8540.

SKI EQUIP.: 3 pr. child's boots, 3 pr. child, skis, adult skis 190cm w/bind., 2 pr. man's books, sz. 11, all reason. HA 7-6399.

SKIS: Child's 4 ft. 8 in. Hanover, buckle boots, sz. 3 & 4, $10/ea. 431-5716.

SKIS: Combi, 195cm metal skis w/Look/Nev 1 toe Telemat heel bind., $70; Blizzard, 205cm fbgl. skis w/Look/Nev Grand Prix bind., $90; Hart std., 205cm w/Look/Nev 1 toe Rotamat heel bind., $70; Fischer, 190cm RSL, new, metal, skis, $100; new Head 703-203cm w/Look/Nev. bind., $140; woman's ski boots, sz. 6, 8½. AN 5-7543, after 5.

MISC.: 6 ft. all metal skis w/unmtd. Tyrola bind., $25; Heathkit FM tuner, $10; Garrard auto. changer, $25. 598-1525.

ICE SKATES: Man's, new, sz. 10½, hockey type, $12.50. A. Von Goertz, Ext. 7933.

MISC.: 24 in. girl's bicycle, $10; antique paisley shawl, ask. $40. MO 5-1228.

BICYCLE: 28 in. hvy. dty. Columbia, new, coaster brake. BR 3-4151.

THAYER COMBO: Baby carr., stroller, car bd. & car seat, $25. 681-9588, after 4:30.

MISC.: Biltrite hi-chr.; child's formica tp. tbl. w/2 chrs.; infant seat. 333-3820, after 6.

MISC.: Cassette recorder, Chan. Mast 6309, AC/DC, 9 trans., 2 diodes, 2 therm., 4 in. spkr., mike, earphone, Vu meter, AC bias and erases, ALC, stor. for 4 cassettes & access., $55. 543-2423, after 6 p.m.

MISC.: G. E. caseette tape recorder, $20; lrg. wagon, $11; 33 rpm LP mono & stereo records; asst. toys & games. IV 9-1431, after 6 p.m.

SPKRS.: 2 Utah AS-2A 8 in. acoutic suspen. sys., never used, $60/both. 543-2423, after 6 p.m.

SPKR. SYS.: 2 cust. 400 spkr. btms. for guitar or P.A.; 2, 15 in. spkrs., 1, 15 in. horn for ea. btm., 1½ yr., w/cov., $325/both. JU 7-5813.

RECEIVER: Lafayette LR-775, 100W stereo AM/FM w/loud., stereo/mono tape montor, hi-filter, main/remote spkr. switches w/wal. case, $175. 884-3934.

STEREO CONS.: Webcor 44 in., early Amer. w/AM/FM tuner, ext. jack capability, 4-spd. phono. 543-8743.

HAM EQUIP.: Comp. 2 meter sta. w/HQ145C receiver, transmitter & ant., $200. 265-7036.

For Sale

PUPPIES: Irish setter, AKC, Canadian champ sired. 751-2284.

HOUSE: Florida, N. Palm Bch., access to ocean, 3 bdrm., din. rm. or 4th bdrm., fam. rm., air cond., 2 car gar., low 40s. Y. Chang, Ext. 86319.

HOUSE: Oceanside, 2 blks. L.I.R.R., 4 bdrm. cape, 2 car gar., w-w, air cond., encl. porch, $32,000. 581-1766.

HOUSE: Sayville, 8½ rm. ranch, 60x35, 2½ car gar., ¾ acre w/trout stream, fin. bsmt. w/bk. ent. @ ground lvl., wh. alum. s-s, w-w, raised terr., underground sprinkler, elec. gar. dr., $39,900. LT 9-1680.

HOUSE: 3 bdm. cape, fin. attic, hardwood fls., full bsmt., 2 car gar., 16 yr., $28,000. 538-1557, after 5.

HOUSE: St. James, older col., 2 full bath, 3 bdrm., 2 car gar., oil-hot water, mod. kit., price flex. due to land option. 862-7421, after 4.

HOUSE: Hicksville, 7 rm. ranch, storms. full scrns., appli., 60x100, '71 tax. $768, principals only, conventional mtge., $28,990. PY 6-8909.

HOUSE: Massapequa, legal 2 fam./mother-daugh., 3 bdrm. up, 2 add. bdrm. apt. down, sep. ent., bath & kit., all brick, firepl., 100x100 corner, fully lndscpd., $200/mo. rental, take o'6% mtge., $36,000. 799-8788.

PROPERTY: Ridge, 5 acres, Wm. Floyd Pkwy. bet. Rte. 25 & 25A, east side Wm. Floyd, $23,000. 744-6903, evgs.

E-Z CAMPER: '71 pop tp., slps. 6, full kit., slides out, dinette, hang. closet, hyd. bks., spare tire, used 5 times, $1,200. 728-2184.

TRAVEL TRLR.: '71, 23 ft., fully self-cont., slps. 6, gas/elec. refrig., stove w/oven, dbl. sink. bathrm., shower, used twice, xtras, $2,950. 567-1303.

FORD: '61 Fairlane, 4-dr., wh./w/red int., auto. drive, pwr. steer., 2 new snows, $150. 883-5009, after 6.

RENAULT: '71, less than 500 mi., $1,600. 472-1561.

FASTBACK: '68 VW, blue, snow, AM/FM, less than 37,000 mi., $1,250. 671-8708.

TRAIL BIKE: 5 hp, reblt. eng., wide tires, ask. $125. WE 1-3076.

TONNEAU COV.: For '64 MGB, leatherette, handbk., tail lgt., rim incl., best offer o'$15. 671-8708.

ENG.: '67 Saab, V-4, nds. work, $50. HR 2-1568.

BOAT: 18 ft. fbgl. runabout, cov., controls, instru., 60 hp Johnson, trlr., 100 lbs. moor. compl., dinghy, oars, skis, xtras, $1,200. OV 1-3641. after 5.

DUCK BOAT: 12 ft., oak ribs w/cedar plank., $150. RO 4-3998.

SAILBOAT: 14 ft. fbgl. Alcort Sunfish, comp., $390. 261-8790.

BOAT: '71, 22 ft. Mako, 125 hp Pwr. Tilt Evinrude, outriggers, tach, 5 gal. tank, used 10 hrs., xtras, $4,400. 728-1930.

TIRES: 4 new Goodyear G60x15 poly, mtd. on 7 in. wide rims, fit Ford or Chrysler, $35/ea. w/wo rims, $40/ea. w/rims; 2 M&H 11:00x15x28.5 drag slicks, XS12 compound, w/tubes, $75/pr. IV 5-2880.

TIRE RIMS: 2 Ford 5 bolt rims for 8:45/H78x15 tires, $10/both. 921-8265.

SNOWS: 2 tires w/5 lug whls., Dunlop Shure grip, 820x15, $45. 587-1395.

WHLS.: Mags, 4, 6x15 American, 5 spoke rims, spinners & lugs incl., $90. 226-3398.

SNOWS: 2, 695x14 Firestone Town & Country, 4 ply, tubeless, ice grips, mtd. on Merc./Ford rims, $40. HA 7-4986.

SNOWS: 2, 8:15x15, w/w, 2 rims off '67 Ford Galaxie, 500 mi., $35. 938-6140.

SNOWS: 2, 7:00x13 w/w, used 10,000 mi., $15. 728-2184.

SNOWS: 855x14 mtd. on '88 Olds rim, Gen'l Winter Cleat, tubeless, Nygen, $30. WA 2-0213.

MISC.: 2, G78x15 Dynaglass snows on rims, $45; AM auto radio, $15. 248-0918.

TIRES: 2, F70x14 Goodyear poly, 2,000 mi., w/Dodge Charger whls. & deluxe whl. cov., $70. 864-1912.

PARTS: '62 Lark Studebaker, 4-dr. being dismantled, all parts in working order, best offer. 333-7429.

MOTOR: '69, 440 c.i., 375 hp magnum for Dodge, Plymouth or Chrysler, 30,000 mi., comp. from oil pan to carb., $275. IV 5-2880.

CARRIER: Car tp., waterproof, home made lgt. wgt., approx. 16 cu. ft. of space, fits low on car roof, can be ad. to fit most cars, $35. 888-5548.

GO-CART: Cust., 3½ hp Westbend eng., $95. OV 1-0455, after 5.

HOUSE: Sayville, 4 rm., firepl., 1 blk. Great So. Bay. 589-5559, evgs.

For Sale

HOUSE: Waterfront Freeport, 3 bdrm. cust. ranch, alum. sid., 2 bath, fully lndscpd., $39,500. IN 8-4237.

HOUSE: N. Bellmore, ¼ acre treed/fenc., 3 bdrm., din. rm., new cust. eat-in-kit., full bsmt., w-w, s-s, dishwash., alum. sid., gar., patio, barbeque, 15x25 pool/deck, $31,000. CA 1-3228.

HOUSE: Wading River, 3 bdrm. cust. ranch, firepl., full bsmt., gar., oil heat, wood plot. 929-4912.

HOUSE: Plainview, 3 bdrm. hi-ranch, 1½ bath, 2 car gar., lrg. fam. rm., sundeck, firepl., all appli., rugs, drapes, fenc. yd., lndscpd., Apr. occup., $44,000. 681-1918.

HOUSE: W. Babylon, 4 bdrm. cape, fin. bsmt., cov. patio, carpet., s-s, treed corner lot, less than $700 tax., ask. $30,000. 884-7111 after 3 p.m.

MISC.: Wh. dress. tbl., $15; wicker dress. tbl., $10; portocrib w/matt., $10; larg. Biltrite carr., $30; bassinet, $10; hi-chr., $12; asst. toys, best offer. RO 4-7135.

MISC.: 40 in. round contemp. fruitwood cocktail tbl. w/2 match. end tbls., $75; Ital. prov. easy chr., $60. 333-8689.

MISC.: Din. tbl., 2 leaves, 4 chrs., cov. FR 8-4295.

SOFA: Gold brocade sect., Castro conv. w/chr., $200. 732-2454.

RECLINER: Berkline, Ital. prov., orange-gold naugahyde uphol., wal., 3-position, ask. $75. 212 OR 1-2021.

MISC.: Wal. corner tbl., round coffee tbl. & 2 love seats, tangerine cush., $65. WE 5-8623, after 6.

MISC.: Verni-Martin tbl., $50; treadle Singer mach., oak cab., $30; school desk & chr., $12; brass ceil. fix., $28; mantle clock, $24; 15x18 Oriental pict., $14. LI 1-3410.

PIANO: Lester-Betsy Ross, wal. console w/bench, nds. tune, $350. WE 5-3714, evgs.

DRUMS: Slingerland-bass, 3 toms, snare, grey pearl, vibra hi-hat, 2 Zildjian cym., access., $300. 751-0456.

CELLO: ¾ sz. incl. bow & carry bag, ask. $150. 822-3528.

ELEC. GUITAR: 2 pickups Guild, case, sunburst, ask. $75. SU 5-7311.

GUITAR: Guild, F 212, 12 string flat tp., hard case, $225. 249-2704.

CB RADIO: Johnson Messinger 323, 23 channels, $125. 587-0161.

STEREO EQUIP.: Dyna 120 pwr. amp., assem., never used, ask. $129. 212 AR 6-3330.

ELEC. WORKSHOP: Heathkit 4 transistor, exp. set, assem., $15. 751-1256.

AQUARIUM: Metaframe, 125 gal., 18x20x72 comp. w/access., std., $225. MO 7-2920.

MISC.: Fender Mustang guitar; water bed & access.; pin ball mach.; wood lathe & access.; tape deck tapes. HA 7-0245.

MAG.: Nat'l. Geographics, most issues '39 thru '52. HA 3-3138.

MISC.: Brown shoulder lngth. fall w/form & case; wed. gown, sz. 3 short, Lord & Taylor. 586-3511.

CORDWOOD: Smithtown area, $30 per cord, your pickup. JU 4-6206, after 6.

HOT WATER HEAT.: Rheem 30 gal., G 27, glass lined, LP gas, $35. FR 8-4295.

EXT. LADDER: To 24 ft., $12. 549-4908.

ALUM. GUTTER: Wh., 35 ft., 10 ft. lngth., Sears hvy. gauge & connectors, never used. 681-7338.

SNOW THROWER: 20 in. Craftsman, instr. & parts manual incl., approx. 3 yr., $75. 724-2756.

SNOW BLOWER: 3.5 hp Briggs & Stratton eng., $50. Bruce Hollister, Ext. 3558.

TYPEWRITER: Port. std. Olivetti, ask. $60; lady's wardrobe, sz. 5 & 7, misc. PE 1-2318, after 4 p.m.

CAMERA: Kodak Instamatic 500 w/auto. f2.8 lens, case & Tully Agfa flash, $40. R. Grant, Ext. 86098.

SUZUKI: '71, 90, 1,970 mi., $300; '66 Brigestone, 175 twin 15,180 mi., $400; '61 Cadillac, all pwr., air cond., cust., $950. 249-1840.

SUZUKI: '70, 125cc, mod. T125, 2 helmets, 2 saddlebags, lug. rack, bike cov., chain, manual, $300. 212 LA 8-0783, after 5:30.

MINI BIKE: '71 Sears, 400cc, 2-spd., $180. 938-6140.

RIMS: '63 Dodge; '63 Rambler or will swap for '70 rims Dodge Dart. 887-1411, after 5.

TIRES: 2 snows & rims, used 1 season, 5.70x15 fits '67-'72 VWs, $25. 747-8025.

SNOWS: 2, studs, Suburban Goodyear, F78/14, 1 new, 1 used 1 season, $45 both. WE 8-9666, after 6.

PARTS: '69 Ford Galaxy, 2-dr. hdtp., 389, V-8, auto., drs., rear end, 19,000 mi., best offer. 692-8267.

For Sale

TRUCK CAMPER: '67 Eldorado, 11½ ft., self cont., motormatic hd., icebox, 3 burner stove/oven, xtras, 785-4871.

MISC.: Chevrolet 6 cyl. head, comp., new; radiator, fits 6 cyl. or V-8, '61-'62. PY 8-4899.

SNOWS: 2, 13 in. Sempert, used 4 mo., $65. 888-5446.

WHLS: 2 sz. 13. 212 IN 3-9239.

MISC.: Exh. emission ctrl. parts for '68 & up Sprite or Midget; 1098 cc mod. eng. for Sprite or Midget, $170; dress. tbl., gl. tp. w/piano stool & full skirts, bdspread & lamp, $25. PY 8-4258.

MISC.: 2, 14 in. 5 lug rims; Biltrite fold. carr., Navy blue; crib & chest of dwrs.; blue car bd., best offer. 724-0743.

MOTORBIKE: 3 hp Briggs & Stratton, reblt. motor, set up for rac., spring fork, hvy. dty. spokes, new clutch, $100 or best offer. PI 2-5571.

MISC.: 70 hp Mercury outbd. eng. w/all ctrls., elec. start., 2 gas tanks, hi-spd. brass prop., ask. $200; antique player piano, $75. 585-5567.

CAMARO: '71, ctr. cons., rear spkrs., red/blk. vinyl roof, $2,950, Eleanor Lombardo, Ext. 7939.

BUICK: '65 Wildcat, grn., pwr. steer. & bks., xtras, $325. 437-0282.

OLDSMOBILE: '64, 88 conv., 6 tires, pwr. steer. & bks., $400. 751-1643.

OLDSMOBILE: '67 Cutlass Supreme, air cond., pwr. steer., bkt. seats w/console, blue w/blk. vinyl tp., $1,040. 724-5919, evgs.

MERCURY: '70 Montego, 2-dr. hdtp., std., 6 cyl., R&H, low mi., $1,895. OR 1-4547.

BUICK: '69 Opel Rallye Kadett, red & blk., new tires, auto., ask. $400. 212 740-9876.

BUICK: '49, Dynaflow Super, 4-dr. blk. sed., $250. AM 4-4043.

PONTIAC: '68 Le Mans; '68 MGB-GT. HR 3-9219.

IMPALA: '68, 4-dr. hdtp., auto., pwr. steer., air cond., xtras. WE 5-5378.

COUGAR: '68, new poly tires, snows w/rims, air cond., pwr. steer. & bks., 53,000 mi., $1,600. AN 1-8256.

BUICK: '61 Invicta, 2-dr. hdtp., 325 hp, bkt. seats, pwr. steer., bks., wind., & seats, wh. w/wide red stripe, $500. 589-6767.

PLYMOUTH: '66 Valiant, reblt. eng., '70, 10,000 mi., 60,000, auto., R&H, $700. MO 1-3621, after 6.

MUSTANG: '66 Fastback, 289 c.i., 4-bbl., 3-spd. std., pwr. steer., 6 whls. & tires, incl. snows, dk. grn. w/beige int., 59,000 mi. 692-6449.

MUSTANG: '71 Mach I, 351 eng., 4-bbl., 4-spd. Hurst, air cond., pwr. steer. & disc bks., R&H. FR 8-1946, after 6.

PONTIAC: '65 Tempest, 4-dr. sed., dk. blue, 6 cyl., std., ask. $350. 212 762-2163.

RAMBLER: '66 Amer., 6 cyl., std., $250. SU 1-5730.

OLDSMOBILE: '70, 442, blk., auto., 365 hp, 455 c.i., 3.42 posi rear, Rally II whls., sun, tach, xtras, $2,650. 731-2818.

OLDSMOBILE: '68 Cutlass, all new tires, $1,200. 226-4352.

HOUSE: Massapequa Pk., 3 bdrm., 2 bath, firepl., panel, den, bsmt., major appli., low 40s. 799-1987.

HOUSE: Hollis, Queens, 7 rm. Dutch col., 4 bdrm., 1¼ bath, foyer, screen porch, firepl., gar., 60x100, nr. everything, $550 tax, $33,900. 212 HO 5-0740.

HOUSE: 3 bdrm. ranch, 1½ bath, din. rm., lrg. eat-in-kit., all appli., 18x18 rec. rm. w/raised terr., w-w, s-s, fin. bsmt., exit grnd. lvl., 2½ car gar. w/elec. dr., undergrnd. sprinkler w/well, trout stream rear of ¾ acre, $39,500. B. Bates, Ext. 3744.

MOBILE HOME: '69 Newport Contessa, 12x60, 2 bdrm., air cond., patio, shed, comp. set up Audit Pk. in Hyde Pk., N.Y., $10,000. 914-876-6619.

DINETTE SET: Wrough iron, wh., formica tp., 6 chrs., blk. w/red & wh. check. seat cov., $100. 938-1141.

KIT. CAB.: 2, 8 ft. sect., incl. counter tp. range & wall oven, both elec., $190. 724-4656, after 5.

MISC.: Cushman dbl. drop leaf din. rm. tbl. & 4 chrs., $35; 2, '70, 15 in. rims, $15. 368-2915.

TV: 21 in. Philco, lgt. oak cons., remov. whls., wrap around sound, $60. 731-4609.

KIT. SET: 4 wrought iron hi-bk. chrs., round formica tbl., 6 mo., $100. 665-5680.

KIT SET: Tbl., 4 chrs., gray & chrome, $35. JU 1-3125.

GAS STOVE: 30 in. Welbilt, $50. 586-8558, after 5.

GAS STOVE: Dbl. oven, 4 burners, clock, timer & lgts., $100. WE 1-8648.

SKI BOOTS: Men's LaDolomite plastic, sz. 10½, $35. CA 1-4128.

Frances Lyons
Supervisor, Sec'l Serv.

"I saw the Job Opportunity Bulletin and applied. It's really a good way of doing things; it's fair."

Bob Sison
Project Engineer, P/S

"When the job opening was posted my manager urged me to apply. Getting a promotion that way breeds loyalty."

Charlie Broadway
Foreman, Plant 33

"I've been in the Company several years and I think this is a fine idea. It helps to find the best man for the job."

Fred DeLucia
Group Leader, FAD

"My only question was 'Could I supervise?', but I was assured I could. People should be encouraged to apply."

Carl Lubin
Supervisor, Req. Plan.

"Some people don't know what job opportunities are available. The new system gives everyone a chance."

Keeping posted: 35 find promotion program does work!

It helps to know where the rungs are when you're trying to climb the ladder of success. That's the rationale behind an inter-office memorandum issued by Bill Zarkowsky, President of Grumman Aerospace, that reads, in part:

"Henceforth, in accordance with our continuing efforts to strengthen our Equal Employment Opportunity Affirmative Action Program, each Promotion Review Board shall review and approve, as a minimum, promotions into all supervisory positions up to and including the position of Manager or its equivalent within its area of operation. Those boards which presently include more senior positions shall continue to review and approve promotions into these positions."

According to Charlie Fuschillo, manager of Personnel Development in the Personnel Department, "This has to be a great help both to an individual employee and the Company. It guarantees, so far as possible, that the most qualified person is moving into a higher position and responsibility.

"Put another way, it insures optimum utilization of our human resources; and human resources—people—are the most important elements in any business." And Fuschillo continues:

Opportunity to progress

"One of the best ways to build a strong organization is to give its people an opportunity to progress. That's what our Supervisory Promotional Opportunity (SPO) program is all about—helping people to realize their potential."

The SPO mechanism is simple and direct: Whenever a supervisory opportunity occurs, is will be posted on all bulletin boards from Garden City to Calverton. It will be posted for a full week. Any employee who believes he's qualified for the opening should file a Supervisory Review Request form, which is available at any Employee Services office.

Every SPO request form, by the way, is kept on file for a full year, and there is a continuing review of each form that's filed so that none "falls through the cracks."

Does it work? Well, in 1971, 35 people rose to supervisory rank via this route. There were 49 promotional openings within the levels specified in Zarkowsky's IOM; of the remaining 14, two were cancelled and the other 12 openings are still pending.

Nor are promotions the only area that concerns Fuschillo and his staff. "We try to help people get into jobs that are more suited to their skills and aspirations. Last year, we helped arrange for 284 transfers. In addition, 144 people who might have lost their jobs because of the RIF (reduction in force) found spots in other sections of the Corporation. It's all part of a three-pronged Company commitment—to keep on as many employees as business conditions warrant, to promote capable people, and to fill vacancies **from within.**

"It's very important to mention that the Company looks to outside sources **only** when the skills it needs cannot be located in house."

Post job openings

That leads into another phase of Personnel Development's effort, Job Opportunity Program (Job Opportunity Bulletins). As with the SPO program, whenever a job opening exists in Grumman Aerospace, notice of the opening is posted on bulletin boards at Long Island plants. It remains posted for a week. Any Grumman employee with a year's service or more who has not been transferred within the past year is eligible for the opening. (Naturally, he has to meet the job requirements listed in the specific Bulletin). The next step is to call Personnel Development on Ext. 1523 for a personal interview.

As a courtesy, it's **suggested** that an employee notify his supervisor before calling Personnel Development, but it's not mandatory.

To help assure that everyone is considered when a job vacancy comes along, skill codes have been set up and put on computer tapes: Every employee's primary, secondary, and tertiary skills have been coded and compiled in a skills inventory bank, so a "search" can be taken quickly whenever the need arises. After all, what helps the employee can also help the Company.

Fuschillo also points to a career development program, one in which each employee's performance and potential are evaluated by supervision in order to help the employee "grow" on the job, and perhaps go to a better job. All this ties in closely with the philosophy of "participative management" in which both the employee and his supervisor constantly take part in a mutual growth process.

"The key," says Fuschillo, "is for supervisors to develop their subordinates, to work with them towards established goals and objectives. Each supervisor has the responsibility to train and guide his people. In that way, the subordinates really participate in the decision-making process. It builds their egos, makes them more responsive and loyal, and, in the end, increases productivity. Everybody gains."

If that sounds a bit idealistic, Fuschillo sees it in another light, as something eminently practical. He sees it, too, as a morale builder. And as he phrases it:

"Personnel development is everybody's business."

Personal touch. **If you answer a Job Opportunity Bulletin, you might well end up as this lady is, chatting with Charlie Fuschillo, manager of Personnel Development. Grummanites are considered first, says Fuschillo, whenever a job opening occurs. (Photo by Fred Annette)**

GAA announces spring flight

The dates for Grumman's charter flight to Europe, just announced by the Grumman Athletic Association office, will be May 26 - June 17, 1972. The charter plane will be a Pan American Boeing 707, accommodating 179 passengers and going via London to Frankfurt and return. Sign-up day will be Tuesday, February 1, at 5:30 p.m. in Plant 28. Full payment of the $180 fare will be required at that time. Since this is a charter flight, IATA regulations restrict eligibility to employees, retired personnel, and close relatives. Children under two, no charge.

Fourteen working days will be required for the trip, but those with fewer vacation days available may be able to arrange for them in order to participate. More details on the trip will be published in the January 28 Plane News.